AN ANALYSIS OF FOUR IMPLEMENTATION LEVELS FOR THE POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS (PBIS) ON SELECTED AGGREGATED HIGH SCHOOL STUDENT PERFORMANCE OUTCOMES

A Record of Study

by

KIMBERLY LASHON RHODES-MONETTE

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Chair of Committee,	Gwendolyn Webb-Hasan
Committee Members,	Homer Tolson
	Beverly Irby
	Novella Carter
Head of Department,	Fred Nafukho

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ABSTRACT

The Positive Behavioral Interventions and Support (PBIS) framework is a school-wide program formulated to address discipline and academic performance along with social behavior skills. The framework provides a positive approach to school interventions through creating a normative culture by communicating and supporting student behavior expectations across all school context. I examined the differences among four levels (i.e. high, moderate, low, or none) of PBIS implementation on selected aggregated high school student performance outcome variables from 2007 through 2011. Many PBIS researchers have focused only on how the implementation of the PBIS system impacts the academic performance and discipline rates at elementary and middle school levels. My study may bridge a gap in literature and make the connection between the levels of PBIS policy implementation on student performance variables at the high school level such as the (a) discipline rate, (b) academic achievement rate (i.e. math and reading TAKS pass rates), (c) attendance rate, (d) dropout rate, and (e) graduation rate.

The study was conducted in 10 high schools within one suburban-urban school district. An ex post facto design was used to examine the differences in student performance outcomes among the high schools with varying levels of PBIS implementation. A two factor factorial mixed model ANOVA was used to analyze the data. There was a significant difference in the means of the Dropout Rate between levels of PBIS implementation. There was a significant difference in the means of the Discipline Infraction Rate, Math TAKS Pass Rate, and Attendance Rate across the time span of the study. There was no difference in the means for the Reading TAKS Pass Rate or Graduation Rate.

DEDICATION

I want to thank God for giving me the strength to complete this project. I would like to dedicate this body of work to my daughter, Brittany Baisley. She has stood by my side through this entire process and sacrificed a great deal of quality time, so I could complete my studies. I especially thank my parents, James and Shirley Rhodes, for their undying love and support. I would also like to thank my many family members, friends and coworkers who have supported me throughout this process. I could not have achieved my goal without your love and support. A very special thank you is dedicated to my car pool group, Drs. Dewayne McGary, Robert Long III, and Cheryl Henry. Their continued support and guidance helped me to endure this process from beginning to end.

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CHAPTER I

INTRODUCTION

The preparation of students to become productive members of society is one goal of education. Educators are preparing students for various options after high school including: (a) university or trade school matriculation, (b) military service, or (c) employment in the workforce. Ideally, when students receive high school diplomas, they are prepared to become productive members of society. Weiss (1988) concluded high school completion plays a significant role in students' future success. To meet the demands of society after high school, the Elementary and Secondary Education Act (ESEA), passed by the U.S. government in 1965, stiffened the standards for high school students. In 2001, the ESEA was renewed as the No Child Left Behind Act (NCLB) and the standards were redefined. Although the standards to graduate from high school are more rigorous, employers complain that high school graduates going directly into the workforce remain ill prepared for the rigors of the current workforce (Graves, 2009). Many students from culturally and linguistically different backgrounds have experienced more difficulties completing high school (Sugai & Horner, 2002a).

Weiss (1988) compared high school graduates with dropouts across four job components. The components included (a) output per hour, (b) comparative advantage in more complex job functions, (c) propensity to quit, and (d) propensity to be absent. Through his investigation, Weiss found high school graduates earn higher wages relative to dropouts. He discovered an advantage for graduates in output per hour and an advantage in more

complex job functions. Weiss concluded high school graduates, in comparison to dropouts, had a lower rate of absenteeism and were less likely to quit their jobs (Weiss, 1988).

In 1998, Holzer and Danziger conducted a study of job availability for disadvantaged workers. Holzer and Danziger (1998) identified disadvantaged workers as students of color (i.e., Black and Hispanic), high school dropouts and welfare recipients. In their research, they compared the work habits and skill levels of high school graduates to those of disadvantaged workers. Holzer and Danziger concluded that disadvantaged workers lacked those skills necessary to perform complex job related tasks and were therefore less likely to become employed. The results of their study supported one of the goals of education to not only prevent students from leaving high school before graduation but to also strive for the successful completion of high school with the necessary skills to become successful in the workforce.

As previously identified, there are advantages for students obtaining a high school diploma prior to entering the workforce. However, Harrison (2010) reported that less than 75% of students in the U.S. graduated from high school each year, which when compared to the graduation rates of students of other industrialized nations, accounted for one of the lowest rates. In order to best prepare students for lifelong success, educators must work to prevent students from leaving high school prior to graduation. By promoting graduation from high school, educators should increase the ability of students to meet the demands of the workforce.

Positive Behavioral Interventions and Supports

One program schools have employed to support the improvement of measures for students' performance outcomes was the Positive Behavioral Interventions and Supports

(PBIS). PBIS had been identified in the educational literature as an intervention program for addressing disciplinary cases related to behavioral changes and was conducted school-wide, with all students being held responsible for knowing and following the framework (Horner, Sugai, Todd, & Lewis-Palmer, 2005). PBIS has also been referenced as a school-wide program formulated to address cases of discipline and academic performance (Hemmelgarn, Glisson, & James, 2006). The conceptual framework of PBIS was defined as an aggregate of procedures, management methods, and techniques designed to enhance students' educational experiences leading to desired positive changes (Sugai, 2009).

The creators of PBIS, Drs. George Sugai and Robert Horner, described the theoretical foundation of PBIS as an organizational practice designed to approach school behaviors from a positive perspective (Sugai and Horner, 2002a, 2002b, 2006, and 2009). PBIS was designed as a three-tiered framework for a school-wide approach to preventing behavior problems. The first tier of the PBIS continuum involved a behavior plan designed for all students and staff. The first tier laid the foundation for the communication and establishment of the normative behaviors and expectations across the school setting. At this level, the behavioral goals should be met by 80 to 85% of the student body. The second tier of the continuum was designed to assist students in need of more support toward positive behaviors. At this level, the behavioral goals should be met by the 10 to 15% of the student body needing more support. The third tier was designed to provide additional supports, including adult contact and mentoring, frequent and positive prompts, and the support of specialist. At this level, the behavioral goals should be met by the 1 to 5% of the student body in need of more intensive interventions (Sugai & Horner, 2002, 2002b, 2006, & 2009).

To meet the goal of preparing students to complete their studies and meet future responsibilities with success, many educators in U.S. schools developed and implemented intervention strategies to address the needs of students who are at-risk of dropping out. A national survey of 3,691 school-based delinquency prevention programs operating in the spring of 1998 focused on characteristics related to the successful implementation of school-based programs (Gottfredson & Gottfredson, 2002). The characteristics from the survey study included organizational capacity, organizational support, program features, and the integration of the program into normal school operations, local initiation, and local planning. Researchers found that 71% of the employed programs identified best practices as designed by the program and less than 50% of the designed methods were employed. Based upon these findings, the researchers concluded the effectiveness of school-based programs was greatly impacted by the level of implementation for the program (Gottfredson & Gottfredson, 2002).

Gottfredson, Jones, and Gore, 2002, found that the cognitive-behavioral intervention programs applied through instructional programs were not fully implemented in any of the observed classes. In this middle school study by Gottfredson, Jones, and Gore, discipline, attendance, and academic data were compared between the fall and spring semesters. The researchers revealed a decrease in the program effectiveness from the fall to spring semesters. The researchers believed that the decrease in the effectiveness of programs was due to a school climate of low expectations. Based upon their observations, the researchers concluded the level of implementation and resulting success rates of programs depended heavily on a supportive school climate (Gottfredson, Jones, & Gore, 2002). Based upon Gottfredson, Jones, and Gore study, the level of implementation had an impact on the success of school-based programs.

To meet the demands of society after high school, the Elementary and Secondary Education Act (ESEA), passed by the U.S. government in 1965, made the standards for high school students more stringent. In 2001, the ESEA was renewed as the No Child Left Behind Act (NCLB) and standards were redefined. The school district in which this research was conducted defined a successful high school graduate as an effective communicator; competent problem solver; self-directed learner; responsible citizen; and quality producer. In order to best prepare students for lifelong success, educators must work to prevent students from leaving high school prior to graduation. By promoting graduation from high school, educators will increase the ability of students to meet the demands of the workforce.

Statement of the Problem

A problem often associated with students' decisions to drop out of high school is the experience of a disconnection between themselves and the academic and social aspects of the school environment (Bryk and Thum, 1989). The process by which many students leave school prior to completion most likely began years prior to the point of their actual departure from school. Although the process may have originated at the elementary and middle grade levels, the process was often completed at the high school level in the form of students' decisions to dropout before graduation (Harrison, 2010; Sagett, 2004).

In 2002, Griffin explored the linkage between students' decisions to dropout and their connections to the school environment. The disconnection between students and the school may have occurred as a result of repeated negative experiences in the school environment through discipline and academic performance (Griffin, 2002). Griffin reported students were far more likely to dropout when they began to doubt the value of the educational experience as it applied to their personal realities. Although Griffin's study focused on two ethnic groups

of students, African American and Hispanic, Griffin revealed some of the challenges many at-risk students face when making decisions for dropping out of high school. Many students from culturally and linguistically different backgrounds have experienced more difficulties completing high school (Sugai & Horner, 2002a).

Purpose of the Study

Positive Behaviors Interventions and Supports (PBIS) was an organizational practice for positively influencing students' behavior. Using an ex post facto design, I conducted a quantitative study to analyze the differences in student performance in schools with differing levels of PBIS implementation across five school years. The following are the selected aggregated student performance outcomes variables: (a) discipline infraction rate, (b) math and reading TAKS Passing Rates, (c) attendance rate, (d) dropout rate, and (e) graduation rate. I analyzed the differences made by PBIS implementation on these variables for students within 10 high schools in one district. The students in each of the schools were between the ninth and twelfth grade.

Differences in students' performance were observed by analyzing the level of implementation of the PBIS program. Results from my study may allow educators to examine their own levels of PBIS implementation and how student performance is affected by this implementation. A review of policy implementation may show how the PBIS program could be utilized to promote the goal of increasing high school graduation rates for students.

Significance of the Study

Dr. George Sugai and Dr. Rober Horner revealed tangible benefits for student behavioral change which functions to minimize discipline incidents and other detrimental

effects on students' education (Sugai & Horner, 2002a). The focus of the literature on PBIS had been on reducing students' discipline incidents and increasing students' academic achievement (Sugai & Horner, 2006). Despite the success rates associated with the adoption of PBIS, a knowledge gap exists in the understanding the differences in the level of PBIS implementation model and its effect on student performance outcomes beyond discipline and academic performance.

In my study, I explored several gaps in the educational literature of PBIS. I discovered PBIS literature in which researchers examined only the relationship between PBIS and the academic performance and discipline assignments of students at the elementary and middle school levels (Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008c; Warren, Bohanon-Edmonson, Trunbull, & Sailor, et al., 2006). However, the present study bridged a gap in the literature and made connections between the levels of PBIS policy implementation on student performance variables at the high school level. I will share the results of my study with the examined school district. The district may be able to utilize the results from my study to identify system-wide evidence of the current execution practices of PBIS. The initial research tasks and questions of my study were designed to address whether differing levels of PBIS implementation resulted in variation of students' performance outcomes at the high school level with a focus on the graduation rate.

Initial Research Tasks

1. To determine the implementation level of PBIS at each high school based upon the following criteria:
    a. The duration of PBIS practice.
    b. The composition of PBIS leadership team.

c. The composition of PBIS motto and matrix development team.

d. The initial PBIS training.

e. The ongoing PBIS training and support.

f. The perception of the staff members regarding the effectiveness of the PBIS practices.

2. To categorize each high school into one of four PBIS implementation levels (*high, moderate, low, or none*).

Research Questions

1. Is there a difference in the aggregated student performance of high schools with differing levels of PBIS implementation on the following selected aggregated outcome variables:

   a. The discipline infraction rate?

   b. The math TAKS pass rate?

   c. The reading TAKS pass rate?

   d. The attendance rate?

   e. The dropout rate?

   f. The graduation rate?

2. Is there a difference in the aggregated student performance of PBIS high schools and non-PBIS high schools on the following selected outcome variables:

   a. The discipline infraction rate?

   b. The math TAKS pass rate?

   c. The reading TAKS pass rate?

   d. The attendance rate?

   e. The dropout rate?

f. The graduation rate?

Assumptions

One goal of PBIS was to keep students in the academic setting in order to facilitate learning. The positive reinforcement, central to the PBIS model, directly counters the traditional punishment-based means of dealing with students' unacceptable behavior within high schools. Thus, the term "positive change" has remained critical when implementing PBIS in schools (Hemmelgarn, Glisson, & James, 2006). According to Bohanon, Flannery, Mallory, and Fenning (2009), a continuum of interventions are needed to support students in an effort to prevent them from dropping out of school. The authors concluded the embedment of preventive strategies, such as PBIS, into the climate of schools could close the gap between academic achievement and students' discipline infractions while improving the school climate and increasing the likelihood of graduation for all (Bohanon, Flannery, Mallory, & Fenning, 2009).

Limitations

This study had the following limitations:

1. I used students' performance data for ten high schools in one school district.
2. I examined the student performance outcome variables at the school level rather than at student level because the level of implementation was determined at the school level.
3. I established the level of PBIS implementation using my own research objectives.
4. I used an ex post facto design to collect data from both state and district level organizations.

Operational Definitions

This study was conducted in the state of Texas. Although the following terms may be familiar to educators in Texas, some of these terms may have multiple interpretations. The operational definitions for these terms were derived from PBIS literature, the Texas Education Agency (TEA), and the Glossary for the Academic Excellent Indicator System (AEIS) designed by TEA.

- The *Academic Excellence Indicator System (AEIS)* was the annual report of student performance data. The reports are available at the school and district level.
- The *Annual Dropout Rate* was a percentage calculated by dividing the number of students who did not complete school and did not return by the number of 9th through 12th graders who were in attendance for that school year.
- The *At-Risk student* was one who met one of the criterions of the Texas Education Code TEC 29.081. The data to make this determination came from the PEIMs report of the school.
- The *Attendance Rate* was calculated by dividing the total number of days students were present during the school year by the total number of school days for that year.
- The *Discipline Rate* was a percentage derived from the number of discipline incidents reported by the school divided by the student population of the school.
- The *Graduation Rate* (*Completion Rate I)* referred to the percentage of students who graduated, continued school after the graduation was expected, or received a General Education Development (GED) certificate with their cohort.

- The *Level of PBIS Implementation* was the concluding analysis of PBIS practices as measured by the number of years of implementation, the presence and composition of the PBIS implementation team, the composition of the PBIS motto and matrix development team, the ongoing training and support of PBIS with the staff and students of the school and the evaluation of the perception of staff members of the effectiveness of the PBIS program on their campus.
- *Positive Behavior Interventions and Supports (PBIS)* was a school-wide behavioral program designed to set and teach appropriate student behavior expectations.
- The *PBIS Leadership Team* was a collection of stakeholders of the school. The team was utilized to guide the staff and students through the implementation process of the PBIS program concepts and practices.
- The *PBIS Matrix* communicated the expected student behaviors in various locations of the school i.e. the classroom, hallway, bathroom, bus, and cafeteria. The statements were displayed in a chart form in student language in various locations in the schools.
- The *PBIS Motto* was the defined school-wide expectations of 3-5 positively phrased statements which were designed to be short and embedded into the culture and climate of the school. Many schools designed their *PBIS Motto* around their school theme or mascot.
- The *PBIS Motto and Matrix Development Team* was a collection of individuals within the school who examined the discipline and academic student data of the school then created a personalized *PBIS Motto and Matrix* based upon school

climate and culture to effectively communicate the student behavior goals of the school to the students.

- The *PBIS Motto and Matrix Leadership Team* was a collection of individuals within the school who trained the staff on PBIS policies and procedures. This team led the staff member through the initial training.
- The *Public Education Information Management System (PEIMS)* was a state database used to collect data from all Texas public schools.
- The *Texas Assessment of Knowledge and Skills (TAKS)* was the Texas state standardized assessment of student mastery of the Texas curriculum of students in the areas of math, reading, science, writing, and social studies. The areas of TAKS examined in this study were math and reading at the school level because math and reading were the only subjects tested at each grade level. The tested grade levels include ninth, tenth and eleventh grades.
- The *Texas Education Agency (TEA)* is the educational administrative organization for all Texas public schools.

Summary of the Introduction

An introduction to this ex post facto quantitative study designed to examine if there are a difference among (1) the differing levels for implementation of PBIS and (2) PBIS and non-PBIS high schools and the following student performance outcomes: (a) discipline infraction rate, (b) math and reading TAKS pass rate, (c) attendance rate, (d) dropout rate, and (e) graduation rate was presented in Chapter I. I also presented the (a) theoretical framework for PBIS, (b) statement of the problem, (c) purpose and significance of the study, and (d) initial research tasks and questions. I also included a listing of the operational

definitions used in my study, along with assumptions and limitations of the study. In subsequent chapters, I explored literature related to the study, presented my methodology, reported findings and results, and discussed the results of my study.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, I provided a review of literature to support my record of study. My study was designed to examine the differences between the implementation of Positive Behavioral Interventions and Supports (PBIS) on aggregated student performance outcomes of high school subjects, including graduation rate, across five years. I began the review with an overview of the PBIS literature. The review of this literature included the theoretical framework of PBIS and the evolution of the PBIS program from a special education practice to a school-wide intervention. I also included literature on the influence of PBIS within elementary, middle and high schools on student performance outcomes. This led to an examination of literature on school climate and the high school context. I followed this literature with an examination of factors influencing students' decisions to leave high school before completion as well as the impact of their non-completion. To conceptualize the study, I closed the review with an overview of the No Child Left Behind Act (NCLB) and the Response to Intervention (RTI) method of academic intervention followed by a review of policy implementation.

Overview of Positive Behavioral Interventions and Supports (PBIS)

While conducting a comprehensive review of the PBIS literature, I noted key elements of an effective PBIS school-wide program implementation. These elements were found to be essential in the success of the program in multiple settings. In the early literature of PBIS, the system was referred to as Positive Behavior Supports (Sugai & Horner, 2002a; Sugai & Horner, 2006). As the concept of school-wide interventions grew, the name evolved

to Positive Behavioral Interventions and Supports (MDE, 2001; Muscott, Mann, Benjamin, et al, 2004). The name has since evolved to School Wide Behavior Supports (Bradshaw, Reinke, Brown, et al., 2008; Sugai, Horner, Algozzine, Barrett, et al., 2010; Flannery, Frank, Kato, et al., 2013).

The PBIS framework was based upon amendments to the Individuals with Disabilities Education Act of 2004 (Sugai & Horner, 2009). Drs. Sugai and Horner's framework provided consideration to students whose behaviors fell outside of acceptable social norms and violated school codes of conduct (Sugai, Horner, Dunlap, Hienerman, Lewis, Nelson, et al. 2000). For example, each student in special education settings had an Individual Education Plan (IEP) to address educational needs. Sugai et al. (2000) adopted this concept and applied Positive Behavior Supports and Functional Behavior Assessment to all students in individual schools. They designed a systematic process for identifying problem behaviors and events which reliably led to the occurrence of those behaviors; while also designing a program to sustain non-behaviors over time (Sugai et al., 2000).

Critical to the success of a PBIS system was the adoption of a prevention-based approach to behavior issues directed for the majority of students in a school, with specialty prevention for those students considered at-risk, and highly specialized approaches for those considered to have high risk behavior patterns (Sugai & Horner, 2002; Warren et al., 2006). Sugai (2009) noted three key tiers of the PBIS framework (i.e., general student population, at risk students and high-risk students). These tiers were not meant to become labels for students, merely classifications for current types of behavior displayed by students. Thus, interventions were used in specific cases for students across the three levels, dependent on specific behaviors (Sugai, 2009).

By addressing behaviors immediately, even before official referral and placement, the PBIS framework has the beneficial effect of causing minimal changes to a students' learning context (Carter & Sugai, 1989; Warren, et al., 2006). The PBIS framework, therefore, referred to an inclusive system-wide school program designed to promote the deterrence of discipline problems (Sugai et al, 2000; Sugai & Horner, 2000; 2002a; 2002b). Since practices within the framework evolved from the special education program, a precursor was the functional behavioral assessment, which strove to base decisions on solid evidentiary foundations, (Sugai & Horner, 1999-2000; Sugai et al., 2000).

PBIS Concepts and Goals

One goal of the PBIS framework was to increase students' performance outcomes, such as academic achievement, social competence and preparation for adult work and career responsibilities (Sugai et al., 2000; Sugai & Horner, 2002a; Warren, Bohanon-Edmonson, Turbull, Sailor, Wickham, Griggs, & Beech, 2006). Practitioners (e.g., teachers and administrators) within the PBIS framework began by defining desired outcomes and consequences of student behaviors across multiple dimensions; adopting best-evidence practices and curricula likely to facilitate those desired outcomes; making use of objective data to determine decisions; and implementing necessary support systems to execute a PBIS framework, including administrative support, school processes and routines. In effect, the PBIS design had a focus on the prevention of behavioral issues through a proactive approach to teaching children appropriate social behaviors (Sugai & Horner, 2002b).

The PBIS framework also included encouraging practitioners to utilize interventions grounded in empirical evidence to effect change in students' behavior (Sugai & Horner, 2002b; Sugai & Horner, 2009). The focus of the framework was on behavioral issues in five

separate domains: the individual student, within the classroom, outside the classroom in halls and lunches, across the entire school and within the family and larger community. (Sugai & Horner, 2009). Critical to the success of the framework was the need for teachers and school staff to change their perspectives of students and to recognize the framework was not designed solely for developmentally disabled students, all students could benefit from it.

PBIS in Different Contexts

The creators of the PBIS framework emphasized interventions specific to situations and appropriate for students. Originally intended to help developmentally disabled individuals, the framework has been employed to assist practitioners dealing with behavioral issues in the general student population (Lassen, Steele, & Sailor, 2006). Looking at PBIS across different contexts revealed combinations of state-wide, district-wide, and school-wide practices. Many researchers of state- and district-wide studies used quantitative methods to report results on the efficacy of the framework (MDE, 2001; Muscott, Mann, Benjamin, et.al, 2004). In contrast, researcher of school-wide studies were more likely to use either qualitative or mixed methods to describe the influence of the framework in schools (Netzel & Eber, 2003; Sagett, 2004; Guest, 2011).

PBIS at the State-Level

State practitioners offer different types of support in the PBIS framework, including the basic informational training provided by the state of Missouri (Missouri Department of Education, 2001). From a voluminous statewide perspective, Muller (2002) reviewed the PBIS framework to determine what issues occurred. Muller found critical factors resulting from statewide frameworks include (a) ensuring participation of all stakeholders (i.e., the state teachers union, local educational agencies, social service agencies, and mental health

agencies), (b) providing appropriate assistance to local school districts on both a technical and case management basis, (c) basing the statewide initiatives on PBIS types in terms of reinforcing social behaviors, and (d) establishing a system to collect data to monitor results and assess successes of the programs (Muller, 2002).

Resources made available by states for implementations of PBIS frameworks vary considerably (Killu, Weber, Derby, & Barretto, 2006). In a study including responses from stakeholders in 49 of 50 states, Killu, Weber, Derby, & Barretto noted the range of information available from the states' departments of education varies from none at all to comprehensive. However, Killu et al. (2006) also noted having information available did not ensure local districts and administrators would follow state guidelines, as these entities and individuals generally had broad discretion to design and implement frameworks based on local needs.

In 2007, Doolittle, Horner, and Bradley, conducted a survey of individuals from the state department of education in all 50 states, plus the District of Columbia, to determine the number of states implementing the social behavior goals and elements found in the PBIS framework. The state initiatives measured in their study included (a) character education, (b) school safety, (c) positive behavior support, and (d) professional development to support initiatives, and (e) community/school joint behavior programs. In their study, the authors found character education to be the most common initiative implemented across the 50 states and District of Columbia (Doolittle, Horner, & Bradley, 2007).

PBIS at the District-Level

Research on the PBIS framework specifically focusing on district level implementation was limited. Green (2009) studied a district-wide implementation of PBIS

and found certain key accomplishments had positive impacts on students' outcome performances. Characteristics of the framework included both a unified approach across all schools at all levels and a common language across all schools. When a unified approach occurred, Green noted decreased disciplinary referral; increased teacher presence in the hallways, increased educational time and decreased inappropriate behaviors. In order to accomplish this, however, the district administration made a firm commitment to implementing the PBIS framework (Green, 2009).

PBIS at the School Level

In a large number of PBIS studies, the focus was on a school-wide context. Hagan-Burke, Burke, and Sugai (2007) detailed specific interventions for working with students and in classrooms, in order to maximize student's on-task focus when faced with challenging tasks. These authors used an alternating treatment methodology to confirm the effectiveness of interventions and found strong support that these interventions did impact a student's ability to stay on task (Hagan-Burke, Burke, & Sugai, 2007).

Although researchers of the PBIS framework had well-documented successes in elementary and middle schools, Sugai (2009) noted documentation of success in high schools is limited, though anecdotal evidence exists for improvements at this level. In a study on the implementation of the PBIS framework in a specific school over a period of four years, Lassen, Steel, and Sailor (2006) reported implementing the framework school-wide produced significant reductions in middle-school students' inappropriate behaviors and sustained change over time.

As reported earlier, Bohanon et al. (2009) studied the impact of PBIS on school completion rates. The authors listed key differences in high schools compared to elementary

and middle schools, including (a) age of the students, (b) larger student populations, (d) larger campus size, and (e) organization by subject area (e.g., English, Mathematics, and Science). Sugai (2009) noted these differences in student populations, school size, and organization structure warranted additional study of the influence of the framework in high school settings.

PBIS and School Climate

Schools with effective discipline behavior intervention programs must be firm and caring (Sugai et al., 2000). Multiple authors on PBIS research supported the view that when applied school-wide, the implementation of PBIS frameworks reduce behavioral issues and improved learning climates of schools (Lassen, Steele, & Sailor, 2006; Sugai & Horner, 2006). The School-wide Evaluation Tool (SET) was a measurement instrument used to determine key criteria for school-wide PBIS frameworks, specifically: (a) existence of behavioral expectations across the school; (b) teaching of expectations to all students; (c) reward system for students complying with expectations; (d) consequences for students not complying with expectations; (e) monitoring of student data used to determine decisions; and (f) supporting practices of school administrators and school board members for the framework (Horner et al., 2004; Lassen, Steele, & Sailor, 2006). The use of SET in a PBIS framework required two to three hours of evaluation by an outside observer trained in PBIS (Davis, 2011). Davis questioned, however, as to whether SET was a reliable tool in the evaluation of school implementation of PBIS.

In a New Hampshire study, Muscott, Mann, Bejamin, Gately, Bell, and Muscott (2004), showed positive results in most schools at the multi (75%), elementary (62%), and middle school (50%) levels, but none of the high schools in the study successfully

implemented at least 80% of the PBIS framework. The authors offered no real explanation for why success was not achieved at the high school level (Muscott, Mann, Bejamin, Gately, Bell, & Muscott, 2004). Guthals (2009) investigated a similar study in Montana in which the relationship of PBIS framework was studied along with its effect on students' achievement, problem behavior, and administrator stress. Lower administrative stress levels were found with increased implementation of PBIS interventions (Guthals, 2009). Guest (2011) found properly implemented PBIS frameworks have had a positive impact at the high school level on students' performance outcomes.

The more recent literature of Sugai, O'Keefe, and Fallon, 2012, took into consideration the context of implementing PBIS in culturally and linguistically different populations. These authors determined there was a need to adapt the practices of PBIS to meet the needs of a differentiated school population. The proactive approach of developing school-wide behavior expectations would be further enhanced by considering the needs of culturally and linguistically differing students within a common school culture (Sugai, O'Keefe, & Fallon, 2012).

PBIS and the Level of Implementation

Netzel and Eber (2003) documented results from a state-wide implementation of a PBIS framework in Illinois., In their research, the authors noted the (a) necessity of establishing school and district buy-ins and follow-through; (b) adaptation of the framework to local needs and responses; (c) need to establish a communal philosophy within schools; and (d) forging long-term commitment from school and district personnel (Netzel & Eber, 2003).

PBIS was not designed for short-term use; instead, the program requires a long-term commitment from school officials over several academic years (Sugai & Horner, 2009). Bradshaw, Reinke, Brown, Bevans, and Leaf, in 2008, reported on experiences of school officials after implementing the program. The authors noted the critical importance of initiating the program with an initial system evaluation and continual evaluation on a regular basis. Each evaluation allowed officials to monitor progress and identify which components of the program are proving effective (Bradshaw, et al., 2008).

Further confirmation of the effectiveness for the program was found in a study of a multilevel PBIS implementation in Maryland schools (Barrett, Bradshaw, & Lewis-Palmer, 2008). The authors investigated 467 schools, with officials specifically trained in PBIS. The researchers indicated that the results suggest the state has produced a mechanism effective for generating a high-quality implementation for the program (Barrett et al., 2008). Another study, a longitudinal study of schools implementing PBIS programs nationwide, was conducted by Bradshaw, Koth, Thornton, and Leaf in 2009. The authors reported the PBIS program had a significant positive impact on a variety of measures for the health of schools (Bradshaw, Koth, Thornton, & Leaf, 2009). The authors also noted schools with faster implementations of the program tended to begin from a higher organizational health in initial stages, but those taking longer to implement the program showed greater improvements in student performance outcomes.

Although PBIS models had been widely adopted, widespread adoption of these models is no guarantee of success. Lindsey (2008) noted, for example, that the Drug Abuse Resistance Education (DARE) program was widely adopted in the 1980s but was also demonstrated to be ineffective. In contrast, PBIS, although adopted by a large number of

schools nationwide, has been far from universally implemented. Lindsey stated that innovative models diffusing into broad use typically have five key characteristics: (a) a relative advantage over other models, (c) compatibility with existing models (c) complexity or perceived sophistication with greater complexity implying slower innovation adoption (d) the ability to be established and tested on a trial basis, and (e) advantages to observers (Lindsey, 2008). Lindsey showed in the research that PBIS has many of these characteristics, but lacks complexity and ability to be established and tested on a trial basis.

PBIS and Student Performance Outcomes

There was a correlation between the school-wide number of office discipline referrals (ODRs) and higher levels of inappropriate behavior within schools (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). With respect to the impact of PBIS on school completion rates, Bohanon, Flannery, Malloy, and Fenning (2009) studied the benefits of PBIS implementations in the high school settings, specifically students with high-incidence disabilities. The authors noted inappropriate behaviors and ODRs were associated with lower school completion rates (Bohanon, Flannery, Malloy, & Fenning, 2009).

The PBIS model was based on available empirical evidence used to identify, design, monitor, and assess interventions used in PBIS (Clonan, McDougal, Clark, & Davison, 2007). Clonan et al. found that the data assisted implementers in defining what kinds of interventions were most likely to be effective for specific behavior problems. One such data item commonly used was the number and types of ODRs. These data were readily available and some evidence existed that the number of ODRs were related to poor student outcomes, including failure to graduate (Clonan, et al., 2007). In PBIS, these data were to be viewed in several ways, including (a) the overall number of ODRs in a period of time, (b) the types of

infractions represented by the ODRs, (c) the locations or settings in which ODRs occur (i.e., cafeteria, for example), and (d) the ODRs by student or by staff member. Such data provided insight to guide development of the PBIS model and monitor success in improving students' behavior.

McIntosh, Campbell, Carter, and Zumbo (2009) found a strong association between ODRs and external behaviors, but no significant correlation between ODRs and internalized issues, perhaps because internalized issues rarely result in referrals to the office. Still, correlations existed between ODRs and students' inappropriate behaviors as well as student negative attitudes and classroom issues, such as orderliness and safety (McIntosh, Campbell, Carter, and Zumbo, 2009).

PBIS has also been investigated as a correlate to other measures of student success, including: (a) school attendance, (b) ODRs, and (c) scores in math and reading achievement on high-stakes tests (Postles, 2011). In a three year longitudinal study, researchers compared students from two middle schools which had implemented PBIS and two similar middle schools which did not implement PBIS. Postles showed no significant correlation between the measures of student success and PBIS (Postles, 2011).

Variables that Influence Students to Leave School Prior to Completion

Researchers have spent considerable time studying variables associated with students' decisions to leave school prior to completion. These variables often relate to student characteristics (e.g., ethnic or racial background, gender, or socio-economic status), discipline, and academic performance. Ensminger and Slusarcick (1992) reported on a longitudinal study for a cohort of urban Black first grade through high school students at high risk for school dropout. More than half of students with school records for misappropriate

behavior failed to graduate. Within the cohort of students, their choice to dropout was associated with male first-grade characteristics such as aggressive behavior and poor grades. The authors further concluded economic status was less important for those students classified as socio-economically disadvantaged, or having a mother who did not graduated from high school. In addition, the authors found having an intact parental family with mother and father exhibited positive influence on girls and predicted successful graduation (Ensminger & Slusarcick, 1992).

Driscoll (1999) studied the risk of failing to complete high school among both immigrant and native Hispanic youths. Beginning a study with eighth grade students, the researcher followed a cohort for four years to determine completion rates. The researcher determined second generation eighth grade students were more likely to complete high school while both first and second generation Hispanic youths were more likely to complete high school if they successfully completed one year of high school. Other factors impacting the likelihood of dropping out for these students included family expectations, family income, and past academic performances (Driscoll, 1999). Griffin (2002) noted a key predictor of success in high school was whether or not students engaged in the learning process. In a study comparing Black and Hispanic students with White and Asian students, Griffin found Black and Hispanic students placed much less importance on educational success when deciding whether to dropout or continue their education (Griffin, 2002).

The National Dropout Prevention Center (2007) identified a number of risk factors for students' failure to complete high school. The researchers primarily focused on two areas: the individual and the family (Hammond, Linton, Smink, & Drew, 2007). While these factors can be further delineated, Hammond, Linton, Smink, and Drew summarized these factors as:

(a) presence of an emotional disturbance or learning disability; (b) heavy adult responsibilities or parenthood despite youth; social attitudes values and behaviors; (c) low achieving academic performance; (d) low engagement with the school, as typified by poor attendance, low expectations, refusal to make an effort, and so on; and (e) poor social behavior at school. Hammond et al. noted important sub-factors (a) low socioeconomic status, (b) highly mobile family, (c) low parental education, (d) multiple siblings, (e) single parent or step-parent family, (f) disrupted family, (g) low family expectations, (h) a sibling who did not complete high school, and (i) little parental engagement with school activities as variables leading to students' leaving school before graduation.

The Discipline Gap

In a study on antisocial behavior in schools, Mayer noted a number of factors associated with students' increased antisocial behavior (Mayer, 1995). Mayer identified factors associated with discipline, including (a) attempts to deter criminal behavior by harsh penalties; (b) abusive family relationships; (c) poor and/or inconsistent parenting skills; (d) participation in peer and social groups with an antisocial tendency; (e) low involvement in the school, as shown by poor attendance, (f) failure to do homework or participate in after-school activities; (g) lack of clarity in explaining school policies or consistency in enforcement; and (h) weak or inconsistent support of teachers by administration, with students' failure to complete high school. When such factors are common in schools, Mayer concluded discipline would be a problem as well.

Skiba and Peterson (2000) similarly noted the negative impact of zero-tolerance policies on resolving behavior issues because such policies resulted in removing students from the classroom instead of correcting the behavior. Skiba, Michael Nardo, and Peterson

(2000) noted the evidentiary support for the influence of low socioeconomic status with overrepresentation of disciplinary actions is less robust than issues of gender and race.

In 2002, Webb-Johnson reported that African-American learners often display culturally socialized behaviors different from their classroom teacher and therefore disproportionally receive office discipline referrals. In turn, these students of color were removed from the learning environment more often and were not taught the skills necessary to support their academic success (Webb-Johnson, 2002). To curtail this pattern, teachers of African-American youth would benefit from culturally diverse professional development.

Given this clear evidentiary support for the notion that students of color were disproportionally disciplined in school, the question arises as to why that was the case. Monroe (2005) addressed reasons for this disparity. Monroe noted most education policies reflect perspectives of those creating policy and as White-middle-class professionals inhabit most policy making positions in the U.S. education system, their perspectives tend to dominate. For example, while disrespectful and disobedient actions in a Midwestern school were the most common factors for referrals, White teachers frequently interpreted behaviors by Black students as being disrespectful and disobedient even when students did not intend such behavior; this cultural disconnect between teachers and students was a common issue identified by Monroe (2005). Furthermore, the current trend toward zero-tolerance for school discipline—present in 94% of schools in Monroe's study—appears to generate more unintended consequences rather than resolving behavior issues (Monroe, 2005).

MacPherson and Carter (2009) noted disciplinary referrals were increasing in schools across the country, implying a new approach to discipline within the school context. MacPherson and Carter proposed a theory of academic optimism defined by three key

elements, including teachers having a sense of self-efficacy; teachers trusting both their students and parents of students; and teachers creating student-centered classrooms focused on high academic achievement for all students. Although a positive approach, the authors referenced prior research and noted the need for further research into this approach for improving classroom discipline (MacPherson & Carter, 2009).

Davis (2011) also reported that the number of suspensions in school not only excessively impacted Black students, but also results in a significant loss of instructional time, thus setting these students even farther behind classmates and leading to higher dropout rates. Davis further reported, behaviors resulting in suspension or expulsion from school not only reduced the total instructional time, but also reinforced the antisocial behaviors causing disciplinary actions. Davis also found students of color were more likely to drop out of school than other students. Although the study primarily focused on students of color, it yields insight to dropout factors for all students (Davis, 2011).

The Academic Gap

An increasingly popular strategy to address the academic gap has been retaining students at grade level. Jimerson (2001) performed a meta-analysis of research on the effectiveness of student retention. The results of the author's review of seventeen studies noted that repeating a grade level rarely addressed the factors that caused the student to fail at that grade level the first time. Thus, such students may require additional interventions to help overcome deficits associated with factors linked to grade retention, including (a) low socioeconomic status, (b) single-parent household, and (c) lower cognitive measures (Jimerson, 2001). Longer term, Jimerson found that repetition of a grade did not assist retained students, instead, holding students back in elementary school was associated with

dropping out of high school. Rather than grade retention, Jimerson suggested policy makers consider studies in which more effective techniques including (a) providing mnemonic strategies to children at risk, (b) enhancing students' reading comprehension, (c) using behavior modification and cognitive behavior modification techniques, (d) providing direct instruction, (e) providing formative evaluation of children at risk, and (f) ensuring early intervention for inappropriate behaviors are identified. In a follow-up review of seventeen studies, Jimerson, Anderson, & Whipple, (2002) found grade retention provided a powerful predictor for students' dropout status.

More recently, Sirin (2005) performed a meta-analysis on the impact of socioeconomic status and academic achievement. Sirin identified a significant relationship between these two measures, but a relationship slightly smaller than found in an earlier similar 1982 study. In particular, the author found that when funding and other focus was on schools, rather than specific students, the impact of socioeconomic status was much higher. Disparities in funding between richer and poorer areas were also noted as determinants of that relationship (Sirin, 2005).

Further support for grade retention as a predictor of dropping out came from Roderick (1994), in which grade retention during grades one through six in a longitudinal cohort of an urban school system was shown to substantially increase the odds of students dropping out of school. The author noted that retaining students for one grade after the sixth grade led to disengagement during middle school and failure to complete high school (Roderick, 1994). Roderick, in contrast with the Jimerson (2001) meta-analysis, showed retention of students in elementary grades had little relationship with students' high school graduation rates. However, Jacob and Lefgren (2009) found retaining students in eighth grade significantly

increased the likelihood of students not completing high school. These authors noted interventions can have significant broad-scale impacts beyond those they attempted to address directly. Jacob and Lefgren provided a more recent study of the impact of retention on students' high school completion. Understanding the grade and social contexts of such interventions was important in determining the most effective strategies to ensure effective education of all students (Jacob & Lefgren, 2009).

Still, the impact of grade retention was controversial. Allen, Chen, Willson, and Hughes (2009) performed an extensive meta-analysis of studies conducted on the effect of retention on students' future performance. In their analysis, the greatest negative impact of grade retention occurred in studies having a weak study design in terms of controlling for non-equivalences between retained and non-retained students. In other words, evidence for medium to large effect of retention primarily occurs in studies with poor equivalency. By contrast, studies with better quality design and equivalency between retained and non-retained groups showed virtually no statistical significance between achievement levels of retained and non-retained children (Allen, Chen, Willson, & Hughes, 2009).

School Climate Issues

Bryk and Thum (1989) explored the impact of internal differentiation and normative environments on both absenteeism and failure to complete schooling. The organization and structure of schools had an important influence on students who did not complete high school. The authors hypothesized that a high degree of internal differentiation and a low normative environment contributed to increased absenteeism and greater levels of dropouts. Using a national database, the authors modeled absenteeism and failure to complete schooling. The results of the analyses supported the authors' hypotheses and indicated less

absenteeism and lower dropout rates when there was less differentiation in the school population and when there was a higher normative environment. Furthermore, other variables improving student results included having a teaching staff engaged with the students in a school where discipline was perceived as both fair and effective (Bryk & Thum, 1989).

Social factors have been shown to affect the success of students in school. For example, Pong (1997) noted that students from single-parent families or from step-families have negatively impacted achievement in schools, even after controlling for demographics and family background characteristics. Pong found, however, that establishing strong parental networks within the school in part alleviated the impact of single-parent families and step-families (Pong, 1997). Monroe suggested encouraging teachers to develop greater cultural awareness, develop and implement culturally aware disciplinary policies, expand the discussion around disciplinary issues, and improve the quality of instruction to make it more engaging to the students (Monroe, 2005).

Christenson and Thurlow (2004) gave evidence to support the concept that effective interventions to reduce dropouts cannot be a one-size-fits-all prospect, but instead must be individualized to some extent. These authors proposed a school culture which identified at-risk students and devised an intervention strategy designed to address the specific issues of each student and to ensure that the student remained engaged with school (Christenson & Thurlow, 2004).

The Residual Effects of Leaving High School Before Completion

The residual effects of leaving high school before completion included issues related to work record, transition from school to work, wages, learning disabilities, and prison. In 1987, Rumberger speculated on how well high school dropouts would fare in future job

markets. Rumberger concluded high school dropouts faced a dismal future in the job market. One key factor identified by Rumberger was the work record (Rumberger, 1987). Specifically, Rumberger and Weiss (1988) noted young workers who were high school dropouts also quit jobs frequently and tended to have weaker work records (Rumberger & Weiss. 1988).

Why students who did not complete high school could not find jobs was addressed by Rosenbaum, Kariya, Settersten, and Maier (1990). These authors investigated four theories, including: (a) segmented theory, in which employers ignore the skills of youths; (b) human capital theory which asserts youths' unemployment is due to their own deficiencies; (c) signaling theory, which claims the economic costs of identifying the skills and abilities of youths is too high; and, (d) network theory, which asserts that information from a trusted social network source is more effective and believable (Rosenbaum, Kariya, Settersten, & Maier, 1990). Rosenbaum et al., in particular, looked at institutional networks between employers and schools. The authors noted these networks, in most industrialized nations, were effective mechanisms for improving the ability of youth to find jobs after high school (Rosenbaum, Kariya, Settersten, & Maier, 1990).

Murphy and Welch (1992) noted having a college education increased the earnings per hour of men by 44%, and having more work experience increased hourly income by 75-85%. The conclusion was clear, getting more education and working consistently through the years provides greater economic rewards to students (Murphy & Welch, 1992).

A further issue related to student dropout was learning disabilities. Wagner and Blackorby (1996) cited statistics from the National Longitudinal Transition Study of Special Education Students (NLTSSES) which found 30% of disabled students dropped out of high

school and 8% dropped out of school before entering high school. Typically, such students stayed in school until they were 18 years old, but had earned fewer than half the course credits needed to graduate. In studying these students, Wagner and Blackorby found those students having strong concentration of courses in some type of vocational training were more likely to find employment. In addition, those students with speech or learning disabilities came closest to achieving the employment rates for the rest of the population. Perhaps most importantly, students with learning disabilities had a higher probability of being poor (Wagner and Blackorby, 1996).

Nearly two percent of all adult males were incarcerated in prisons throughout the U.S., a near-doubling in only ten years (Katz, Krueger, Burtless, & Dickens, 1999). (Katz, Krueger, Burtless, and Dickens, noted that because of this increase, the low unemployment rates of the 1990s might have been partly illusory because prison inmates were not counted in those statistics. (Katz, Krueger, Burtless, and Dickens, stated that economic researchers consistently demonstrate that students with at least a high school degree were less likely to be incarcerated in the prison system ((Katz, Krueger, Burtless, & Dickens, 1999).

These issues underlined the need to have every young person graduate from high school. Completing high school remained the single most significant step to acquiring a productive adulthood, a higher education, career and business success, and the foundation to the wealth building capacity experienced by the majority of Americans (Weiss, 1988). Successful completion of high school is an early predictor of a person's achievement level within the society (Graves, 2009). Once students drop out of high school, their economic paths diverge drastically from educated counterparts, and regaining that foothold in the job market becomes substantially more difficult as the years pass (Graves, 2009a; Foss, 2010). In

2011, the job market for high school dropouts bore out Rumberger's predictions. Students who dropped out of high school were far less able to find jobs compared to their peers; those that did find jobs encountered higher and more prolonged rates of unemployment and underemployment when compared to their counterparts with more education (Foss, 2010).

No Child Left Behind Act (NCLB) and the Response to Intervention (RTI)

The authors of the NCLB Act highlighted the achievement gap between white and minority students. As a result, school officials have developed links between assessment and instruction referred to as response to intervention (Demski, 2009). RTI, as defined by Demski, was a framework identifying at risk students and using data to design educational programs which best meet students' needs. Educators were able to structure RTI within a basic three tier structure. Tier 1 was research-based classroom instruction meeting the needs of 80-85% of students. Tier 2 was a more intensive approach reaching approximately 10-15% of students. Finally, Tier 3 was a special education service addressing the needs of the remaining 5-10% of students. Fuchs and Fuchs (2006) characterized RTI as a multitier academic intervention intensifying as students move up the tiers within the intervention.

A purposeful design was utilized to align concepts of PBIS with those of RTI. To begin, school-wide expectations were established for all students. Then, as students displayed needs, either targeted or intense supports were put into place (Fuchs & Fuchs, 2006). As students move up the continuum of support, the design of supports for students' achievement became more personalized (Sugai & Horner, 2000). The supports moved from general or universal to a targeted, student specific approach. Consequently, a more intensive support was designed for a small student population (Fuchs & Fuchs, 2006).

Policy Implementation

In studies of urban populations, improvement for schools more often focused on setting high standards for teachers' performance rather than on students' performance on high stakes tests (Darling-Hammond, 2000). Thus, Darling-Hammond concluded policy implementation strategies should focus more on encouraging quality teaching than high-stakes tests. Other recommendations for implementation included: a focus on students learning core concepts and relevant skills for modern economic success, use of standards-based testing to improve teaching, and focus on improving teacher quality at all levels (Darling-Hammond, 2000).

Darling-Hammond (2004) noted the current emphasis on new standardized testing as a means of evaluating students and schools severely punished schools and led to less access to educational opportunities. Darling-Hammond proposed several strategies for improving this situation, including: (a) equalizing resources across all schools, (b) establishing standards for students' opportunities to learn , (c) modernizing curricula in low-socioeconomic area schools, and (d) investing in quality teaching (Darling-Hammond, 2004).

According to Cohen, Moffitt, and Goldin (2007), well-designed policies contained the resources, incentives and oversight needed to shape practice. The authors reviewed the relationship between policy and practice in public education. For these authors, policy depended on practice. The authors cited the source of conflict between policy and practice as the gap created between ambitious policy aims and the lack of resources available for implementation. To manage the dilemma of putting policy into practice, Cohen et al. (2007) offered four factors of actions and resources: (a) aims, (b) instruments, (c) capacity, and (d) environment. Aims are used to identify desired outcomes from policy implementation.

Ambitious aims required practitioners to move from traditional methods of instructions and assessment (Cohen et al., 2007). When aims were not clearly defined or ambiguous, the lack of clarity allowed practitioners to interpret policy on an individual basis. This individual interpretation hindered effective policy implementation. Instruments were the resources provided by policy makers to aid in the implementation of the policy. Such resources may include money, mandates for action, incentives to comply, flexibility to adapt policy with the local conditions, and ideas that inspire or inform implementers' understanding and actions. Capacity was the resource practitioners offered to aid in the implementation process. Those resources may have included knowledge, values, and skill along with intrinsic resources such as will. The environment itself to which the policy must be implemented contributed to the results of the policy (Cohen et al., 2007).

The pressure on teachers to improve student academic performance and social behavior has also led to greater interest in monitoring teacher performance in the classroom. For example, Colvin, Flannery, Sugai, and Monegan (2009) identified a format for observing classroom performance focused on three variables: (a) instructional setting of classrooms, (b) instructional practice of teachers, and (c) behavior of students in the classroom. Using these variables, the authors provided specific feedback to teachers in specific situations and conditions under which poor performance occurred. After teachers made appropriate changes, the researchers noted students were more engaged in instruction and the amount and severity of inappropriate behavior had substantially reduced (Colvin, Flannery, Sugai, & Monegan 2009).

Hypotheses of the Study

In an effort to curtail discipline and improve students' performance outcomes, many school districts adopted the PBIS framework to expose students to social skills (Demski, 2009). In my study, I analyzed the differences between the differing levels of PBIS implementation on student performance outcomes in ten high schools within one school district across five years. In my hypotheses, based upon the a review of literature, (a) there should be significant differences in the students' performance outcomes in high schools associated with the level at which PBIS was implemented in the high school across the years of the study and (b) there should be significant differences in the students' performance outcomes in high schools in with PBIS implementation as compared to those high schools without PBIS implementation.

Summary of the Review of Literature

In this chapter, I reviewed literature related to the PBIS framework, high school dropout variables, and residual impacts related to dropping out of high school along with legislative initiatives and policy implementation. First, I discussed the PBIS framework, including concepts and goals of the framework. I then explored the influence of the framework on students' performance outcomes within various contexts. In terms of the academic gap for dropout students, a key issue was whether students had experienced grade retention. I also explored the impact of dropping out, noting that students failing to complete high school suffer significant economic and career setbacks. Background information on NCLB and RTI was given to support the need for effective school-wide behavior and academic support programs. Finally, hypotheses were developed from the evidentiary

literature presented. In the following chapter I discussed the methodology used in my study, including the research design, research questions, and data collection and analysis sections.

CHAPTER III

METHODOLOGY

The purpose of this quantitative study was to analyze the differences of student performance outcomes for ten high schools with differing levels of PBIS implementation. The measured student performance outcome variables were the discipline infraction rate, the math and reading academic performance rates, the attendance rate, the dropout rate, and the graduation rate across five years. I organized this chapter to explain the methodology utilized to accomplish the initial research tasks and answer the research questions in the following manner: (a) design of the study; (b) state, district, and school environments; (c) variables examined; (d) instruments; (e) data collection; and (h) data analysis. The following initial research tasks and questions were addressed:

Initial Research Tasks

1. To determine the implementation level of PBIS at each high school based upon the following criteria:
    a. The duration of PBIS practice.
    b. The composition of PBIS leadership team.
    c. The composition of PBIS motto and matrix development team.
    d. The initial PBIS training.
    e. The ongoing PBIS training and support.
    f. The perception of the staff members regarding the effectiveness of the PBIS practices.

2. To categorize each high school into one of four PBIS implementation levels (*high, moderate, low, or none*).

Research Questions

1. Is there a difference in the aggregated student performance of high schools with differing levels of PBIS implementation on the following selected outcome variables:
   a. The discipline infraction rate?
   b. The math TAKS pass rate?
   c. The reading TAKS pass rate?
   d. The attendance rate?
   e. The dropout rate?
   f. The graduation rate?
2. Is there a difference in the aggregated student performance of PBIS high schools and non-PBIS high schools on the following selected outcome variables:
   a. The discipline infraction rate?
   b. The math TAKS pass rate?
   c. The reading TAKS pass rate?
   d. The attendance rate?
   e. The dropout rate?
   f. The graduation rate?

Design of the Study

I employed an ex post facto quantitative research design in this study (Gall, Gall & Borg, 2007). Existing data were used to analyze the difference among highs school with differing levels of PBIS implementation on discipline infractions, math and reading academic

performance, attendance, dropout, and graduation rates of ten high schools within one school district. The ex post facto research design was purposeful because I did not manipulate the PBIS variable to affect the student performance outcome variables (Gall, Gall, & Borg, 2007). Thus, through the usage of the ex post facto study design, I did not choose the year for which the schools implemented the PBIS program or influence the level of PBIS implementation within each school. The nature of the study design allowed me to draw on the casual inferences needed to address the initial research task and answer the research questions posed as definitively as possible.

State, District and School Environments

The State

The selected district was located in the state of Texas. In 1993, the Texas State Legislature mandated the creation of a public school accountability system for rating and evaluating school districts and campuses. As a result, public schools in the state of Texas received administrative leadership, resources and guidance from the Texas Education Agency (TEA). There were many responsibilities of TEA to the public schools of Texas. Some of the responsibilities of TEA included the development of the state-wide curriculum, the administration of the state-wide assessment of the curriculum, the management of a state-wide data collection system along with the rating of schools under the state-wide accountability system (TEA, 2011).

Information gathered for my study on the aggregated student performance data of each high school was obtained from a state-wide data-base, the Public Education Information Management System (PEIMS). TEA representatives organized the information from PEIMS and displayed the information into an annual Academic Excellence Indicator System (AEIS)

report for each public district and school. The information was published and made assessable to the public through the TEA website, http://www.tea.state.tx.us/ (TEA, 2007; TEA, 2008; TEA 2009; TEA, 2010; TEA, 2011; & TEA, 2012). The definitions for all terms used on the AEIS reports were found in the AEIS Glossary for each school year and accessed through the TEA website as well (TEA, 2007; TEA, 2008; TEA 2009; TEA, 2010; TEA, 2011; & TEA, 2012).

The District

A convenience sample of one school district allowed the researcher to compare ten high schools that operated within a unified structure (Creswell, 2003). The setting of this study was a large suburban public school district in the southeast region of Texas. The ex post facto design of the study utilized existing data from the school district and TEA. The district data were acquired from the various departments of the school district and the TEA website. The values of the examined aggregated student performance outcome variables were collected in yearly intervals over a period of five school years, 2006-2007 through 2010-2011.

TEA classified each Texas school district into one of the following categories: major urban, major suburban, other central city, other central city suburban, independent town, non-metropolitan: fast growing, non-metropolitan: stable, rural, and charter school districts. The selected district exhibited qualities of two classifications; major urban and major suburban. According to the TEA definitions, a major urban district was located in a county with a minimum population of 775,000, contains at least 75% of the student in that county enrolled in the public school, and services at least 35% of the student population that was considered economically disadvantaged (TEA, 2011). A major suburban district was defined as a

district that did not meet the criteria of a major urban, was in close proximity to a major urban district or in the same county of a major district, and its enrollment is at least 3 percent that of the neighboring major urban district or at least 4,500 students (TEA, 2011).

During the last year of this study, the selected district was the 2nd largest in the county, the 3rd largest in the state, and the 25th largest in the nation (American School and University, 2011, as cited by the selected district, 2011). Over the last several years, the district had experienced a tremendous amount of growth. Since 2000, the district added 32 new campuses. By the conclusion of the 2010-2011 school year of this study, the district operated 83 campuses: 52 elementary, 16 middle schools, 11 high schools, and 4 special program facilities.

As of the last year of the study, 2011, the selected school district possessed the characteristics of a major urban district as defined by TEA. It was located in a county of more than 775,000 residents and serviced 46.5 % economically disadvantaged students (TEA, 2011). However, TEA guidelines only allowed one major urban district per county. Therefore, since the selected district was located within the same county as a major urban district with a larger population; it was classified as a major suburban district (TEA, 2011).

The Schools

As mentioned earlier in this chapter, the school district operated eleven high schools. However, only ten of the eleven high schools met the criteria of this study through the utilization of a comprehensive curriculum for ninth to twelve grade students. The excluded high school serviced eleventh and twelfth grades only and did not offer the comprehensive curriculum that was found in the evaluated ten high schools.

The sampling procedure was purposeful in nature. The students enrolled in the ten high schools within the sample district were the sources of the aggregated student performance data at the school level (Warner, 2013). The observed high schools were coded as HS 1, HS 2, HS 3, HS 4, HS 5, HS 6, HS 7, HS 8, HS 9, and HS 10. By comparing the data of the high schools with differing levels of PBIS implementation, the results of the study may yield evidentiary results which educators at the state, district, and campus levels may draw conclusions regarding the effect of application of PBIS on student performance outcomes at the high school level.

Variables Examined

The aggregated student performance outcomes of high school students grouped into ten high schools in one Texas school district were analyzed in this study. The study included PBIS and non-PBIS high schools.

The Independent Variables

The level of PBIS implementation within each high school was an independent variable. I evaluated the level of PBIS implementation of each high school in Initial Research Task 1. The resulting evidence collected from Initial Research Task 1 yielded the categorization of each high school into quantified nominally ranked implementation levels; *high, moderate, low, or none* in Initial Research Task 2. The second independent variable was time. The schools were evaluated over the span of 5 years (2007-2011).

The Dependent Variables

The aggregated student performance outcomes examined were the discipline infraction rate; the math and reading academic performance pass rates; the attendance rate; the dropout rate, and the graduation rate. These variables were continuous in nature. The

academic pass rate on the math and reading portions of the TAKS, attendance rate, dropout rate, and graduation rate were recorded as a percentage related to the student population of the school. The variable values were obtained from the AEIS report of each high school through TEA. The student performance rates of each high school were recorded for each year of the study.

During the evaluated years of this study 2006-2007 through 2010-2011, the indicators used by the state to rate schools varied. Although there were variations in the indicators the state used to rate the districts and schools, the variables observed throughout this study were reported each year. These performance indicators were submitted by each school to TEA through the PEIMS system.

The numbers of student discipline infractions were not accessible through TEA. These values were obtained from the Department of Informational Services of the school district. The district-wide student behavior expectations were defined in the student handbook and code of conduct of the school district. For the purposes of this study, the recorded number of discipline infractions included student behavior offenses which interfered with classroom instruction such as excessive talking and inappropriate interactions with peers and adults. The infraction number excluded offenses such as tardy to class or placements to the discipline campus. The tardy infraction was excluded because it fell under the attendance policy; therefore, the consequences were not clearly defined by the student code of conduct policy of the district. According to the Department of Student Services of the selected district, the schools used a high rate of variability when reporting tardy infractions; therefore, the Department of Student Services did not include these values in their PBIS report to the district. With regards to the exclusion of the discipline placement count, the

student behaviors which resulted in the discipline placement were a part of the discipline infraction number. Including the discipline placement count would duplicate some of the infraction count; therefore, this number was not included in the total number of discipline infractions.

Data Collection Instruments

A survey design was utilized to establish the levels of implementation of PBIS within a school (Creswell, 2003). The evaluation of the level of implementation of each campus was gathered through the use of two surveys: The Principal PBIS Implementation Survey (Appendix A) and the Effective Behavior Support (EBS) survey (Appendix B). The participants of the Principal PBIS Implementation Survey were the principals of each PBIS high school. The participants of the EBS survey were the staff members of each PBIS high school. The data for the aggregated student performance outcomes were gathered from two sources: the Department of Information Services of the school district and the annual AEIS report of each school for each year of the study.

Validity and Reliability of the Instruments

The two surveys were utilized to categorize the schools into levels of PBIS implementation. The Principal PBIS Implementation Survey was used to invite the principal of each PBIS high school to report the PBIS implementation practices at the campus level to include the year of PBIS implementation, the introductory training of PBIS ideas, concepts and practices with staff members, along with the ongoing professional development with staff and training in PBIS of the student population. The EBS survey was administered by the Department of Information Services of the school district towards the end of each school year. In the EBS survey, staff members of the PBIS schools recorded their perceptions of the

level of PBIS implementation in four areas: the host environment, the team management of data, the non-classroom setting/active supervision, and the classroom.

To establish the content validity of the Principal PBIS Implementation Survey, I utilized a test group of 10 educational administrators who participated in a PBIS school. The test group answered the survey questions then evaluated whether the survey yielded a measurement of the level of implementation from the survey participants. The test group met with me to discuss the implications of the survey and the ability for me to yield the desired measurement of the level of implementation as perceived by the campus principal with regards to the initial PBIS training and on-going staff development and student training on PBIS concepts. The test group agreed that I would be able to draw relevant and purposeful inferences from the scores on the survey model.

The validity of the EBS survey was established through the Educational and Community Supports, College of Education at University of Oregon by Robert H. Horner, Ph.D (Coffey & Horner, 2012). According to Dr. Horner, EBS was a survey assessment tool/instrument for research, annual assessment, and progress monitoring of the implementation of school-wide PBIS implementation practices. According to Horner, the survey met the validity requirement because the design was evidence-based and reliable; it was consistent across states, met the assessment needs, and was not duplicated by any other tool/instrument currently in use (Coffey & Horner, 2012). The reliability was an estimate of the consistency of the results to previous similar studies (Gall, Gall & Boyd, 2007).

The aggregated student performance outcome variables were recorded on the Student Performance Outcome Data Collection Instrument (Appendix C). The discipline infraction count was obtained from the school district database. The TAKS (math and reading) pass

rates, attendance rate, dropout rate and graduation rate are obtained from TEA. The Student Performance Outcome Data Collection Instrument was designed to organize the collected independent and dependent data of each school. The instrument was accepted by the committee members during the record of study proposal hearing at Texas A&M University.

Data Collection

Prior to collecting data, approval was granted by the International Review Board at Texas A & M University and the school district. Data collection began June of 2012.

The Independent Variables

A prerequisite to gain permission to conduct research within the selected district required me to obtain the signed approval of the principal of each high school evaluated in the study. To begin the approval process, I requested a meeting with each principal. This request was sent electronically via email to each principal (Appendix D). To verify university approval for my research to the principals, I gave each principal a copy of the Texas A & M Information Sheet (Appendix E). The Information Sheet was designed by Texas A & M University to describe the purpose, risk, benefits, and the level of participation needed to complete the study to the participant. Secondly, I met with the ten principals individually to answer questions regarding the purpose and goal of the research study. The principals of campuses who implemented PBIS completed the principal survey. The principals of non-PBIS schools were not given the survey because their schools did not participate in PBIS.

The EBS survey was used to gather the staff members' perceptions of the level of PBIS implementation within their high school. The selected school district's Department of Campus Improvement administered the survey electronically to the staff members of PBIS campuses beginning in 2008. The department then collected and submitted the data it to the

Department of Student Services of the district. The results of the EBS surveys were available for 2008, 2009, 2010, and 2011 school years.

The evaluation years were selected based upon the implementation of PBIS into the high schools. Implementation began in the 2006-2007 school year and the study concluded in the 2010-2011 school year. The beginning implementation year was determined by the school district.

The Dependent Variables

The discipline infraction data for each school was supplied by the Department of Information Services of the school district. The math and reading TAKS pass rates, the attendance rate, the dropout rate, and the graduation rate for each year of the study were located on the AEIS report obtained through TEA.

Data Analysis

I employed multiple quantitative techniques to analyze the data of this study. The quantitative data were analyzed through the computer software program Statistical Package for the Social Sciences (SPSS) manufactured by IBM. Descriptive and parametric analytical techniques were employed to define, describe, and analyze the findings in the form of figures and tables (Creswell, 2003; Fields, 2009). All statistical tests were conducted at an alpha level of 0.05. The results were analyzed for statistical significance at that level.

Descriptive statistics were utilized to describe the state, district, and school populations. The level of PBIS implementation was evaluated through the use of two surveys: The Principal PBIS Implementation Survey and the EBS survey. The results of these surveys were quantified to produce numerical values. Basic mathematical calculations, such as adding and averaging, were performed to summate the values of the criteria of this

independent variable to assign the level of PBIS implementation at the high schools. The resulting values were used to assign the levels of PBIS implementation which were *high, moderate, low, and none*.

Next, I examined the differences for the differing levels of PBIS implementation in terms of on the aggregated student performance variables across the years of the study with a 2 factor factorial mixed model analysis of variance, ANOVA (Fields, 2009). Mauchly's test of sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized values was proportional to the identity matrix of each student performance outcome variable. To determine whether there was significance in the test within the values of the variables and years of the study, one of two test procedures were used. If sphericity was met, then results of the Sphercity Assumed were used. If sphericity was not met, then results of the Lower-bound were used (Fields, 2009). If significance was found for the interaction term of the within-subjects tests, Simple Main Effects (SME) analyses were performed. The values of the Sidak pair-wise comparison procedures were used to determine where differences existed within a profile.

Summary of the Methodology

In previous chapters, I introduced the study and reviewed literature related to the study. In this chapter, I organized the methodology of this study to communicate the research design, state, district, and school environments, the variables examined, data collection instruments utilized and the validity and reliability of those instruments along with data collection procedures, and data analyses. In the following chapters, the findings and results along with a discussion of the results will be displayed to address the initial research tasks and provide answers for the research questions.

CHAPTER IV

RESULTS

In my ex post facto quantitative study, I analyzed differences for PBIS implementation in the high school setting. My outcome variables were selected aggregated student performance variables across five years. My investigation involved ten high schools within one school district in the state of Texas. I used data over the span of five years from the 2006-2007 to the 2010-2011 school years.

In the previous chapters, I introduced the initial research tasks and questions, as well as a review of pertinent literature and the methodology I used to address the initial research tasks and questions of this study. In this chapter, I displayed the findings and results of the study. I began the chapter with a description of the state, district and schools' student demographic data. I then reviewed the initial research tasks and questions. Next, I displayed the values of the independent variables and the dependent variables examined for each high school. I concluded the chapter with the results of the 2 factor factorial mixed model ANOVA tests. Using these tests, I analyzed differences of PBIS implementation on the selected aggregated student performance outcome variables across the years of the study.

State, District, and School Demographics

To describe the state, district, and school environments, I listed the values of variables within the public school environment which include: (a) grade K-12 student enrollment, (b) the high school enrollment (grades 9-12), (c) the percentage of high school enrollment (grades 9-12) for the state and district, (d) the percentage of the each monitored ethnicity group, as well as (e) the percentage of some student learner diversity attributes within the

state, district, and schools. The state and district school data included grades K-12. The examined high schools' population data included students enrolled in the grades 9-12.

Most researchers studying PBIS and student performance, as evidenced in my literature review, also reviewed student demographic population trends to illustrate the size and diversity of the context of a studied system. The student population was the total number of students enrolled in each school. To display the cultural diversity of the chosen district, I presented the ethnic population percentages of the following student subpopulations: African American, Hispanic, White, Native American, and Asian/Island Pacific. To display some of the learner diversity attributes of the chosen district, I recorded the percentages of Economically Disadvantaged, Limited English Proficiency, and Special Education student subpopulations. My descriptions of the population data were based upon the information collected from TEA covering 2006-2007 to 2010-2011 school years.

The State

I described the Texas public school system student population enrollment for grades K-12 in Tables 1 through 3. In Table 1, I displayed the K-12 public school enrollment.

Table 1

The Student Enrollment in the Texas Public School System from 2007 to 2011

Year	Total K-12 student enrollment	Total high school (9-12) student enrollment	Percentage high school student enrollment (%)
2007	4,576,933	1,271,344	27.8
2008	4,651,516	1,290,924	27.8
2009	4,728,204	1,296,385	27.4
2010	4,824,778	1,319,638	27.4
2011	4,912,385	1,339,882	27.3

During the span of this study, the total student enrollment increased from 4,576,933 students in 2007 to 4,912,385 students in 2011. The high school enrollment increased from 1,271,344 students in 2007 to 1,339,882 students in 2011. The percentage of high school students enrolled in Texas public schools decreased from 27.8% in 2007 to 27.3% in 2011.

I described the cultural diversity in the Texas public school system grades K-12 enrollment in Table 2.

Table 2

The Student Ethnicity Population in the Texas Public School System from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	14.4	46.3	35.7	0.3	3.3
2008	14.3	47.2	34.8	0.3	3.4
2009	14.2	47.9	34.0	0.4	3.6
2010	14.0	48.6	33.3	0.4	3.7
2011	12.9	50.3	31.2	0.5	3.5

During the span of the study, the percentage of the African American population decreased from 14.4% in 2007 to 12.9% in 2011. The percentage of the Hispanic population increased from 46.3% in 2007 to 50.3% in 2011. The percentage of the White population decreased from 35.7% in 2007 to 31.2% in 2011. The percentage of the Native American population increased from 0.3% in 2007 to 0.5% in 2011. The percentage of the Asian/Pacific Islander population increased from 3.3% in 2007 to 3.5% in 2011. I described the learner diversity in the Texas public school system grades K-12 enrollment in Table 3.

Table 3

The Student Learner Diversity Population in the Texas Public School System from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	55.5	16.0	10.6
2008	55.3	16.7	10.0
2009	56.7	16.9	9.4
2010	59.0	16.9	9.0
2011	59.2	16.9	8.8

The percentage of the Economically Disadvantaged student population increased from 55.5% in 2007 to 59.2% in 2011. The percentage of the Limited English Proficiency student population increased from 16.0% in 2007 to 16.9% in 2011. The percentage of the Special Education student population decreased from 10.6% in 2007 to 8.8% in 2011.

The District

I used the total public school enrollment for grades K-12 value to describe the relative size of the district. In addition, I used the ethnic population percentages of the following student subpopulations: African American, Hispanic, White, Native American, and Asian/Island Pacific to describe the cultural diversity within the district. Finally, I used the Economically Disadvantaged, Limited English Proficiency, and Special Education student

populations to describe the diversity of learners within the district. I described the public school enrollment for grades K-12 for the district in Table 4.

Table 4

The Student Enrollment in the District from 2007 to 2011

Year	K-12 Student Enrollment	High School (9-12) Enrollment	High School (9-12) Percentage (%)
2007	91,889	25,845	28.1
2008	96,546	27,033	28.0
2009	100,505	27,971	27.8
2010	103,897	29,094	28.0
2011	105,860	29,955	28.3

The total enrollment of the district, during the span of this study, increased from 91,889 students in 2007 to 105,860 students by 2011. The high school enrollment increased from 25,845 students in 2007 to 29,955 students in 2011. The percentage of high school students increased from 28.1% in 2007 to 28.3% in 2011. I described the cultural diversity using the ethnic population percentages in Table 5.

Table 5

The Student Ethnicity Population in the District from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	14.6	35.2	41.4	0.3	8.5
2008	15.2	37.1	38.8	0.3	8.6
2009	15.7	38.7	37.1	0.3	8.8
2010	16.5	38.9	35.5	0.3	8.8
2011	15.5	42.5	31.0	0.2	8.0

The percentage of the African American population increased from 14.6% in 2007 to 15.5% in 2011. The percentage of the Hispanic population increased from 35.2% in 2007 to 42.5% in 2011. The percentage of the White population decreased from 41.4% in 2007 to 31.0% in 2011. The percentage of the Native American population decreased from 0.3% in 2007 to 0.2% in 2011. The percentage of the Asian/Pacific Islander population decreased from 8.5% in 2007 to 8.0% in 2011. I described the learner diversity attributes for the school district in Table 6.

Table 6

The Student Learner Diversity in the District from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	34.2	15.0	8.3
2008	35.7	16.5	7.8
2009	41.5	16.9	7.3
2010	43.2	16.6	7.2
2011	46.5	16.5	7.2

The percentage of the Economically Disadvantaged population increased from 34.2% in 2007 to 46.5% in 2011. The percentage of the Limited English Proficiency population increased from 15.0% in 2007 to 16.5% in 2011. The percentage of the Special Education p-opulation decreased from 8.3% in 2007 to 7.2% in 2011.

The Schools

The participants of this study were the students enrolled in the ten selected high schools within the observed school district from the 2006-2007 through the 2010-2011 school years. The district implemented PBIS into eight of the ten high schools in a tiered format. The school level data included student demographic data, along with the independent and dependent variables. The sources of the ex post facto data were the PBIS campus principals, various departments within the school district, and TEA. The information

gathered was used to address the research objectives and questions. The high schools were coded as HS 1, HS 2, HS 3, HS 4, HS 5, HS 6, HS 7, HS 8, HS 9, and HS 10.

I described the high schools using student population values. For example, I used the total high school enrollment value to describe the relative size of schools over the course of the study. In addition, I used ethnic population percentages to describe the cultural diversity of schools during the study. I presented the following student subpopulations: African American, Hispanic, White, Native American, and Asian/Island Pacific of each high school. Finally, I used Economically Disadvantaged, Limited English Proficiency, and Special Education student subpopulations to describe the student learner diversity within each high school.

HS 1

I described the school enrollment for HS 1 in Table 7.

Table 7

The Student Enrollment Population in HS 1 from 2007-2011

Year	Total Population
2007	3,930
2008	3,904
2009	3,074
2010	2,879
2011	2,488

The 2006-2007 AEIS report reflected enrollment of 3,930 students. The 2010-2011 AEIS report reflected a decrease in the student enrollment to 2,488. I described the cultural diversity for HS 1 in Table 8.

Table 8

The Student Ethnicity Population in HS 1 from 2006-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	24.5	41.0	28.9	0.1	5.8
2008	26.2	43.0	25.2	0.1	5.5
2009	30.1	43.2	21.4	0.2	5.0
2010	33.2	44.0	17.5	0.1	5.3
2011	33.0	47.7	12.4	0.1	5.3

The 2006-2007 AEIS report reflected a student demographic population of 24.5% African American; 41.0% Hispanic; 28.9% White; 0.1% Native American; and 5.8% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 33.0% African American; 47.7% Hispanic; 12.4% White; 0.1% American Indian; and 5.3% Asian/Pacific Islander. I described the learner diversity for HS 1 in Table 9.

Table 9

The Student Learner Diversity Population in HS 1 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	37.7	7.4	8.5
2008	42.0	7.1	8.5
2009	52.0	6.1	8.0
2010	56.5	4.3	8.1
2011	63.1	4.9	9.0

The student learner diversity population of HS 1included 37.7% Economically Disadvantaged, 7.4% Limited English Proficiency, and 8.5% Special Education in 2007. This changed to 63.1% Economically Disadvantaged, 4.9% Limited English Proficiency and 9.0% Special Education in 2011.

HS 2

I described the school enrollment for HS 2 in Table 10.

Table 10

The Student Enrollment Population in HS 2 from 2007-2011

Year	Total Population
2007	3,109
2008	2,992
2009	3,033
2010	2,962
2011	3,000

The 2006-2007 AEIS report reflected an enrollment of 3,109 students. The 2010-2011 AEIS report reflected a decrease in the student enrollment to 3,000. I described the cultural diversity for HS 2 in Table 11.

Table 11

The Ethnicity Population in HS 2 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	17.8	42.7	26.2	0.3	13.1
2008	17.5	46.9	23.6	0.4	12.6
2009	17.9	46.7	23.0	0.4	12.0
2010	18.1	48.8	20.6	0.0	12.4
2011	17.1	52.1	17.7	0.3	11.2

The 2006-2007 AEIS report reflected a student demographic population of 17.8% African American; 42.7% Hispanic; 26.2% White; 0.3% Native American; and 13.1% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 17.1% African American; 52.1% Hispanic; 17.7% White; 0.3% Native American; and 11.2% Asian/Pacific Islander. I described the learner diversity for HS 2 in Table 12.

Table 12

The Student Learner Diversity Population in HS 2 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	38.9	8.4	9.1
2008	38.6	8.1	9.0
2009	47.2	7.7	9.5
2010	49.0	7.4	9.2
2011	54.3	6.9	9.8

The student learner diversity population included 38.9% Economically Disadvantaged, 8.4% Limited English Proficiency, and 9.1% Special Education in 2007. This changed to 54.3% Economically Disadvantaged, 6.9% Limited English Proficiency, and 9.8% Special Education in 2011.

HS 3

I described the school enrollment for HS 3 in Table 13.

Table 13

The Student Enrollment Population in HS 3 from 2007-2011

Year	Total Population
2007	3,331
2008	3,271
2009	3,071
2010	3,191
2011	3,310

The student population of HS 3 decreased from 3,331 in 2007 to 3,310 in 2011. I described the cultural diversity of HS 2 in Table 14.

Table 14

The Student Ethnicity Population in HS 3 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	9.7	16.5	67.5	0.3	6.0
2008	10.9	19.6	62.2	0.2	7.1
2009	13.1	21.3	56.7	0.3	8.7
2010	13.3	21.7	56.0	0.4	8.6
2011	11.8	24.1	52.9	0.3	8.8

The 2006-2007 AEIS report reflects a student demographic population of 9.7% African American; 16.5% Hispanic; 67.5% White; 0.3% Native American; and 6.0% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consists of 11.8% African American; 24.1% Hispanic; 52.9% White; 0.3% American Indian; and 8.8% Asian/Pacific Islander. I described the learner diversity for HS 3 in Table 15.

Table 15

The Student Learner Population in HS 3 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	11.0	2.0	9.2
2008	13.1	2.6	8.9
2009	20.7	2.8	8.4
2010	22.9	2.4	7.3
2011	23.5	2.4	6.0

This population includes 7.6% Economically Disadvantaged, 1.2% Limited English Proficiency, and 8.7% Special Education in 2007. The learner diversity population changed to 23.5% Economically Disadvantaged, 2.4% Limited English Proficiency, and 6.0% Special Education in 2011.

HS 4

I described the school enrollment for HS 4 in Table 16.

Table 16

The Student Enrollment in HS 4 from 2007-2011

Year	Total Population
2007	3,451
2008	3,569
2009	3,208
2010	3,126
2011	2,908

In HS 4 the student population decreased from 3,451 in 2007 to 2,908 in 2011. I described the cultural diversity for HS 4 in Table 17.

Table 17

The Learner Diversity Population in HS 4 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	14.3	28.9	47.8	0.3	8.7
2008	16.4	33.2	42.3	0.3	7.8
2009	16.4	32.8	42.5	0.2	8.2
2010	16.8	34.3	40.5	0.4	8.0
2011	14.6	38.2	37.2	0.1	6.4

The 2006-2007 AEIS report reflected a student demographic population of 14.3% African American; 28.9% Hispanic; 47.8% White; 0.3% Native American; and 8.7% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 14.6% African American; 38.2% Hispanic; 37.2% White; 0.1% Native American; and 6.4% Asian/Pacific Islander. I described the learner diversity for HS 4 in Table 18.

Table 18

The Student Learner Diversity Population in HS 4 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	24.2%	5.3%	7.5%
2008	28.1%	5.6%	7.4%
2009	33.0%	4.6%	7.4%
2010	34.8%	4.0%	7.4%
2011	37.1%	3.1%	7.3%

This population included 24.2% Economically Disadvantaged, 5.3% Limited English Proficiency, and 7.5% Special Education in 2007. The learner diversity population changed to 37.1% Economically Disadvantaged, 3.1% Limited English Proficiency, and 7.3% Special Education in 2011.

HS 5

I described the school enrollment for HS 5 in Table 19.

Table 19

The Student Enrollment in HS 5 from 2006-2011

Year	Total Population
2007	3,044
2008	3,127
2009	3,183
2010	3,283
2011	3,297

In HS 5 the student population increased from 3,044 in 2006 to 3,297 in 2011. I described the cultural diversity for HS 5 in Table 20.

Table 20

The Student Ethnicity Population in HS 5 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	12.0	20.7	59.7	0.4	7.3
2008	13.0	23.9	54.3	0.3	8.5
2009	14.9	26.3	49.0	0.3	9.5
2010	15.7	28.9	45.7	0.3	9.4
2011	16.5	30.8	40.9	0.2	9.0

The 2006-2007 AEIS report reflected a student demographic population of 12.0% African American; 20.7% Hispanic; 59.7% White; 0.4% Native American; and 7.3% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 16.5% African American; 30.8% Hispanic; 40.9% White; 0.2% Native American; and 9.0% Asian/Pacific Islander.

I described the learner diversity for HS 5 in Table 21.

Table 21

The Learner Diversity Population in HS 5 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	18.6	3.7	9.5
2008	20.9	5.0	8.9
2009	27.8	4.4	8.3
2010	31.3	4.2	8.2
2011	35.7	3.6	7.3

This population included 18.6% Economically Disadvantaged, 3.7% Limited English Proficiency, and 9.5% Special Education in 2007. This changed to 35.7% Economically Disadvantaged, 3.6% Limited English Proficiency, and 7.3% Special Education in 2011.

HS 6

I described the school enrollment for HS 6 in Table 22.

Table 22

The Student Enrollment in HS 6 from 2006-2011

Year	Total Population
2007	3,417
2008	3,473
2009	3,287
2010	3,347
2011	3,358

In HS 6 the student population decreased from 3,417 in 2007 to 3,358 in 2011. I described the cultural diversity for HS 6 in Table 23.

Table 23

The Student Ethnicity Population in HS 6 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	16.2	31.9	39.8	0.1	12.1
2008	16.4	36.9	35.1	0.1	11.5
2009	17.5	37.7	33.0	0.2	11.7
2010	19.0	37.3	31.6	0.2	11.9
2011	18.1	39.1	28.1	0.3	11.2

The 2006-2007 AEIS report reflected a student demographic population of 16.2% African American; 31.9% Hispanic; 39.8% White; 0.1% Native American; and 12.1% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 18.1% African American; 39.1% Hispanic; 28.1% White; 0.3% Native American; and 11.2% Asian/Pacific Islander. I described the learner diversity for HS 6 in Table 24.

Table 24

The Learner Diversity Population in HS 6 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	26.1	6.0	7.5
2008	28.7	6.4	7.5
2009	34.7	6.2	6.9
2010	35.5	5.7	7.6
2011	40.5	5.1	6.8

This population included 26.1% Economically Disadvantaged, 6.0% Limited English Proficiency, and 7.5% Special Education in 2007. This changed to 40.5% Economically Disadvantaged, 5.1% Limited English Proficiency, and 6.8% Special Education in 2011.

HS 7

I described the school enrollment for HS 7 in Table 25.

Table 25

The Student Population in HS 7 from 2007-2011

Year	Total Population
2007	-
2008	-
2009	1,535
2010	2,389
2011	3,208

The enrollment information for HS 7 is limited. HS 7 opened in the fall of 2008. The student population increased from 1,535 in 2009 to 3,208 in 2011. I described the cultural diversity of HS 7 during the study is presented in Table 26.

Table 26

The Student Ethnicity Population in HS 7 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	-	-	-	-	-
2008	-	-	-	-	-
2009	20.1	53.2	20.7	0.3	5.8
2010	21.6	52.7	19.5	0.3	5.8
2011	21.5	53.6	16.5	0.3	5.7

The 2008-2009 AEIS report reflected a student demographic population of 20.1% African American; 53.2% Hispanic; 20.7% White; 0.3% Native American; and 5.8% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 21.5% African American; 53.6% Hispanic; 16.5% White; 0.3% Native American; and 5.7% Asian/Pacific Islander. I described the learner diversity for HS 7 in Table 27.

Table 27

The Student Learner Diversity Population in HS 7 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	-	-	-
2008	-	-	-
2009	56.1	8.7	7.2
2010	54.3	7.1	6.5
2011	58.4	6.0	7.0

This population included 56.1% Economically Disadvantaged, 8.7% Limited English Proficiency and 7.2% Special Education in 2009. This changed to 58.4% Economically Disadvantaged, 6.0% Limited English Proficiency and 7.0% Special Education in 2011.

HS 8

I described the school enrollment for HS 8 in Table 28.

Table 28

The Student Enrollment in HS 8 from 2007-2011

Year	Total Population
2007	-
2008	-
2009	836
2010	1,498
2011	2,292

The enrollment information for HS 8 is limited. HS 8 opened in the fall of 2008. The student population increased from 836 in 2009 to 2,292 in 2011. I described the cultural diversity for HS 8 in Table 29.

Table 29

The Student Ethnicity Population in HS 8 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	-	-	-	-	-
2008	-	-	-	-	-
2009	11.4	14.4	68.2	0.5	5.6
2010	11.4	15.4	65.7	0.3	7.3
2011	11.4	21.2	57.9	0.0	5.8

The 2008-2009 AEIS report reflected a student demographic population of 11.4% African American; 14.4% Hispanic; 68.2% White; 0.5% Native American; and 5.6% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 11.4% African American; 21.2% Hispanic; 57.9% White; 0% Native American; and 5.8% Asian/Pacific Islander. I described the learner diversity for HS 8 in Table 30.

Table 30

The Student Learner Diversity Population in HS 8 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	-	-	-
2008	-	-	-
2009	7.9	1.2	4.2
2010	10.7	1.3	5.7
2011	13.4	1.4	6.0

This population included 7.9% Economically Disadvantaged, 1.2% Limited English Proficiency; and 4.2% Special Education in 2009. This changed to 13.4% Economically Disadvantaged, 1.4% Limited English Proficiency, and 6.0% Special Education in 2011.

HS 9

I described the school enrollment for HS 9 in Table 31.

Table 31

The Student Enrollment in HS 9 from 2007-2011

Year	Total Population
2007	3,172
2008	3,118
2009	2,984
2010	2,953
2011	3,149

In HS 9 the student population decreased from 3,172 in 2007 to 3,149 in 2011. I described the cultural diversity for HS 9 in Table 32.

Table 32

The Ethnicity Population in HS 9 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	11.9	36.5	40.7	0.3	10.7
2008	12.7	37.9	37.6	0.3	11.6
2009	12.9	38.5	36.6	0.3	11.8
2010	13.4	40.4	34.1	0.2	11.8
2011	13.1	46.0	26.5	0.1	11.2

The 2006-2007 AEIS report reflected a student demographic population of 11.9% African American; 36.5% Hispanic; 40.7% White; 0.3% Native American; and 10.7% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population of the school consisted of 13.1% African American; 46.0% Hispanic; 26.5% White; 0.1% American Indian; and 11.2% Asian/Pacific Islander. I described the learner diversity for HS 9 in Table 33.

Table 33

The Learner Diversity Population in HS 9 from 2007-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	26.1	5.0	7.1
2008	28.9	6.1	7.5
2009	33.1	5.5	7.3
2010	35.5	5.5	6.9
2011	41.8	5.1	6.8

This population included 26.1% Economically Disadvantaged, 5.0% Limited English Proficiency, and 7.1% Special Education in 2007. The student learner diversity population changed to 41.8% Economically Disadvantaged, 5.1% Limited English Proficiency, and 6.8% Special Education in 2011.

HS 10

I described the school enrollment for HS 10 in Table 34.

Table 34

The Student Enrollment in HS 10 from 2007-2011

Year	Total Population
2007	2,114
2008	3,201
2009	3,479
2010	3,153
2011	2,681

The student population increased from 2,114 in 2007 to 2,681 in 2011. I described the cultural diversity for HS 10 in Table 35.

Table 35

The Student Ethnicity Population for HS 10 from 2007-2011

Year	African American (%)	Hispanic (%)	White (%)	Native American (%)	Asian/Island Pacific (%)
2007	9.6	14.2	70.6	0.3	5.3
2008	10.7	16.7	66.6	0.4	5.7
2009	10.8	17.4	64.9	0.3	6.5
2010	10.5	19.7	62.6	0.5	6.8
2011	10.3	23.0	57.4	0.3	6.3

The 2006-2007 AEIS report reflected a student demographic population of 9.6% African American; 14.2% Hispanic; 70.6% White; 0.2% Native American; and 5.3% Asian/Pacific Islander. As of the 2010-2011 AEIS report, the student demographic population was 10.3% African American; 23.0% Hispanic; 57.4% White; 0.3% American Indian; and 6.3% Asian/Pacific Islander. I described the learner diversity for HS 10 in Table 36.

Table 36

The Student Learner Diversity Population in HS 10 from 2006-2011

Year	Economically Disadvantaged (%)	Limited English Proficiency (%)	Special Education (%)
2007	7.9	1.4	6.8
2008	8.3	1.5	5.9
2009	11.3	1.3	5.9
2010	13.5	1.6	6.5
2011	16.7	1.6	5.8

This population included 7.9% Economically Disadvantaged, 1.4% Limited English Proficiency, and 6.8% Special Education in 2007. The learner diversity population changed to 16.7% Economically Disadvantaged, 1.6% Limited English Proficiency, and 5.8% Special Education in 2011.

Descriptive statistics were used to examine the trends of the population data. There were 5 years of data entries for High Schools 1, 2, 3, 4, 5, 6, 9, and 10 and 3 years of data entries for HS 7 and 8 per characteristic. Therefore the value of N was 46. In Table 37, I described the central tendencies of the total populations for the 10 high schools.

Table 37

The Central Tendencies of the High Schools Total Student Population

Measure		Value
Central Tendency		
	Mean	3,008.37
	Median	3,138
	Mode	3,208

The average population was 3008.37. The median population was 3,138. The mode of the populations was 3, 208. In Table 38, I described the central tendencies of the cultural diversity for the 10 high schools.

Table 38

The Central Tendencies of the High Schools Ethnicities

Measure		African American Value	Hispanic Value	White Value	Native American Value	Asian/Island Pacific Value
Central Tendency						
	Mean	16.20	33.50	40.99	0.26	8.53
	Median	15.30	33.40	40.15	0.30	8.35
	Mode	11.4	28.9[a]	12.4[a]	0.3	5.8

a. Multiple modes exist. The smallest value is shown

The mean of the African American population was 16.2%; the mean of the Hispanic population was 33.5%; the mean of the White population was 40.99%; the mean of the Native American population was 0.26%; and the mean of the Asian/Island Pacific was 8.53. The median African American population was 15.3%; the median Hispanic population was 35.4%; the median White population was 40.2%; the median Native American population was 0.3%; and the median Asian/Island Pacific was 8.4%. The mode African American population was 11.4%; the mode Hispanic population was 28.9%; the mode White population was12.4%; the mode Native American population was 0.3%; and the mode Asian/Island Pacific was 5.8%. In Table 39, I described the central tendencies of the learner diversity populations in the 10 high schools.

Table 39

The Central Tendencies of the High Schools Student Learner Diversity Population

Measure		Economical Disadvantaged Value	Limited English Proficiency Value	Special Education Value
Central Tendency				
	Mean	31.552	4.646	7.546
	Median	32.150	5.000	7.400
	Mode	7.9[a]	1.3[a]	7.3[a]

a. Multiple modes exist. The smallest value is shown

The mean of the Economical Disadvantaged was 31.6%; the mean of the Limited English Proficiency was 4.7%; and the mean of Special Education was 7.5%. The median Economical Disadvantaged was 32.1%; the median Limited English Proficiency was 5.0% and the median Special Education was 7.4%. The mode Economical Disadvantaged was 7.9%; the mode Limited English Proficiency was 1.3% and the mode Special Education was 7.3%.

Results of Initial Research Task 1

The goal of the Initial Research Task 1 was to analyze the implementation level of PBIS at each PBIS high school. The observation of the level of implementation at the campus level included the use of two surveys; Principal PBIS Implementation Survey (Appendix A) and the employee perception survey, Effective Behavior Support (EBS) (Appendix B).

Schools HS 9 and HS 10 were not included in this objective because these schools did not implement PBIS.

I administered the first survey, the Principal PBIS Implementation Survey, to the current principals of the PBIS high schools to record the PBIS implementation practices of the campus during the span of the study. The principals reported the number of years PBIS had been practiced on their campus, the composition of the PBIS leadership team, the composition of the team used to develop the campus PBIS motto and matrix, and information about initial and on-going PBIS training and support practices for staff and students.

The second survey, the EBS survey was administered electronically by the Department of Campus Improvement and Research of the school district to the staff members of each PBIS school. The second tool recorded the perception of staff members regarding the "In Place" PBIS practices in the school.

The collection of the data began from the year of implementation into the first high school, 2006-2007 and continued until 2010-2011. The criterions in the Initial Research Task 1 were assigned a numerical value based upon the level of participation. The total values of each school were compared to one another to determine the overall level of implementation of each school in the Initial Research Task 2. The possible implementation level outcomes were *high, moderate, low, or none*.

The Duration of PBIS

The first year of district implementation, 2006-2007, included two high schools, HS1 and HS 2. Four high schools, HS 3, HS 4, HS 5 and HS 6, were added in the 2007-2008 school year. However, HS 4 only practiced PBIS for two years. HS 7 and HS 8 opened in 2008-2009, as PBIS high schools. The remaining two high schools, HS 9 and HS 10 did not

implement PBIS. In *Figure 1* there is a display of the number of years PBIS was practiced in the observed high schools.

Figure 1. Duration of PBIS Implementation

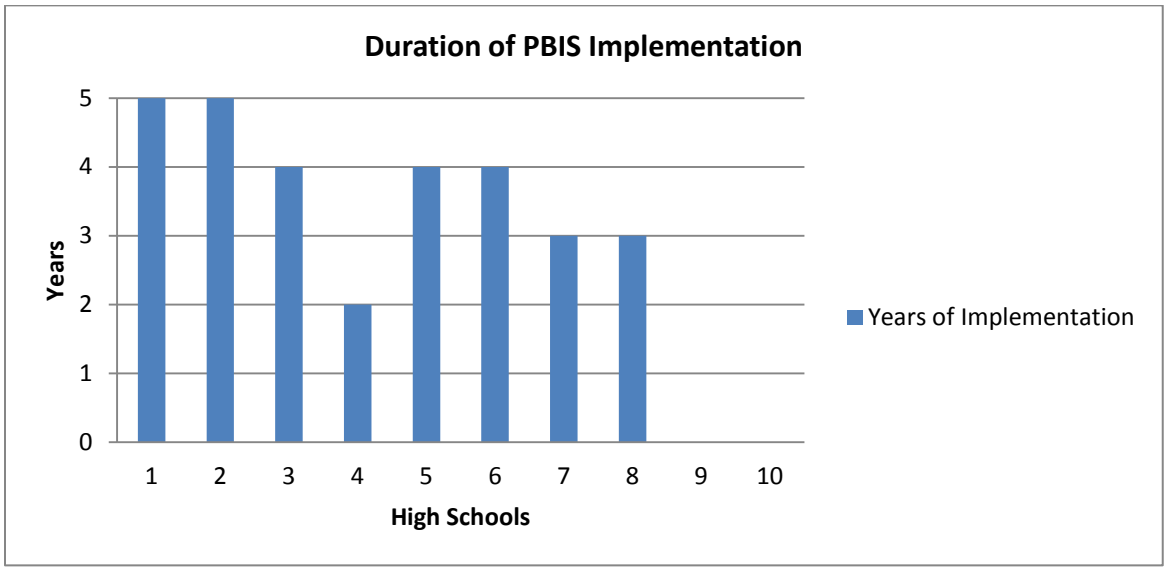

Figure 1. HS 1 and HS 2 participated for 5 years. The value for HS 1 and HS 2 were 5. HS 3, HS 5, and HS 6 participated in PBIS for 4 years and therefore had a value of 4. HS 7 and HS 8 participated in PBIS for 3 years and had a value of 3. HS 4 participated in PBIS for 2 years and had a value of 2. HS 9 and HS 10 had a value of zero.

The Composition of the PBIS Leadership Team

A commonality of each school was the introductory training. The campus leadership team provided a training day for the staff members on PBIS concepts and practices prior to the fall semester of their first implementation year. The composition of the leadership teams are displayed in *Figure 2*.

Figure 2. Composition of PBIS Leadership Teams

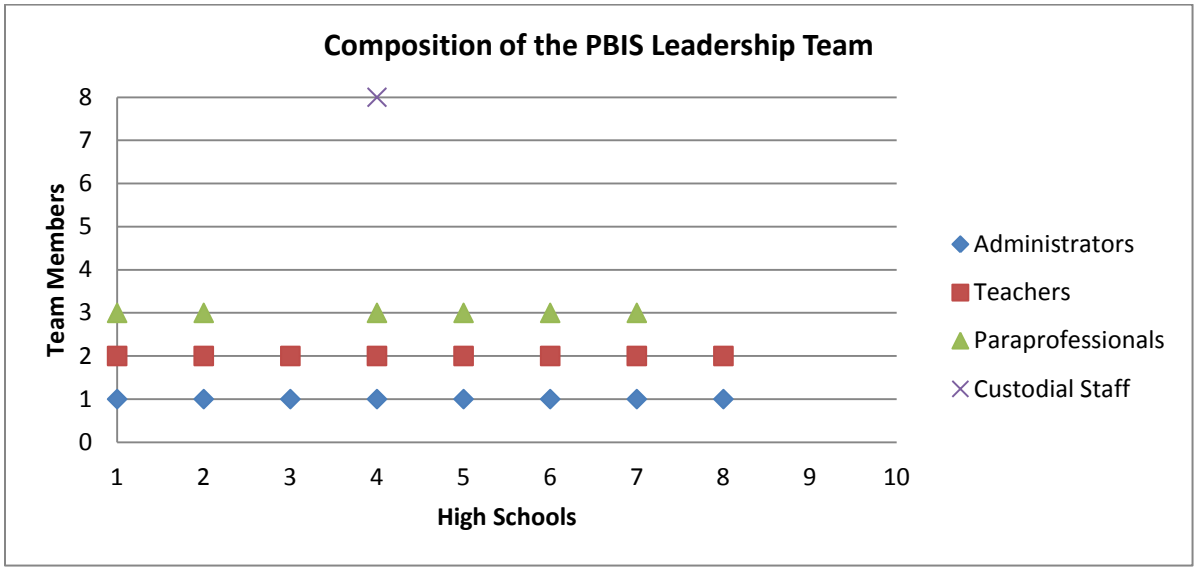

Figure 2. The leadership team of HS 3 and HS 8 was comprised of administrators and teachers only. The value for these high schools was 2. The leadership team of HS 1, HS 2, HS 5, HS 6 and HS 7 comprised of administrators, teachers and educational/teaching assistants. The value of these high schools was 3. The leadership team of HS 4 included administrators, teachers, educational/teaching assistants and custodial staff. The value of these high schools was 4. HS 9 and HS 10 had a value of zero.

The Composition of the PBIS Motto and Matrix Team

After the campus leadership team trained the staff, a team was assembled to develop the PBIS matrix and motto. The composition of the teams used to develop the campus motto and matrix are displayed in *Figure 3*.

Figure 3. Composition of PBIS Motto and Matrix Development Teams

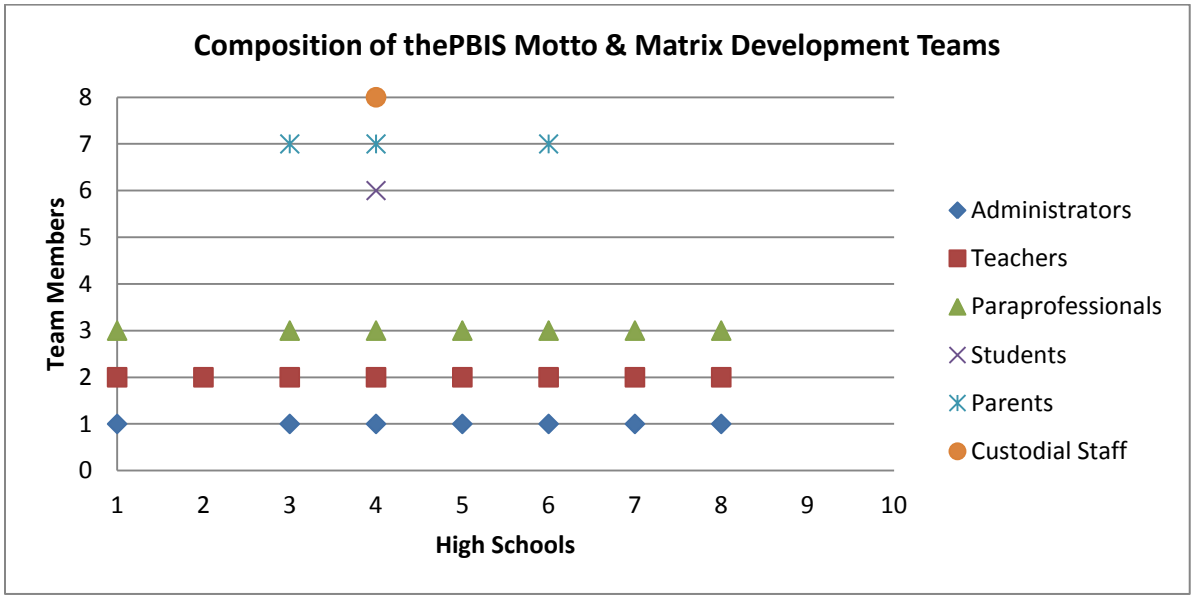

Figure 3. The motto and matrix development committee of HS 2 consisted of only teachers. HS 2 was given the numerical value of 1. The committee members of HS 1, HS 5, HS 7 and HS 8 each had three types of members: administrators, teachers and paraprofessionals (educational/teaching assistants). The resulting numerical value of these high schools was 3. In addition to administrators, teachers and educational/teaching assistants, HS 3 and HS 6 included community members such as parents. This additional inclusion increased the values of HS 3 and HS 6 to 4. The motto and matrix development team at HS 4 consisted of the aforementioned members as well as the custodial and cafeteria staff. Therefore, HS 4 was assigned the value of 6. HS 9 and HS 10 had a value of 0.

PBIS Training and Support in the Initial Training Year

The initial year of training was equal at all PBIS campuses. The leadership team of each high school received two days of training and development on the concepts and principals of PBIS. The training was provided by the Department of Student Services. The value of 1 was assigned to each school because they did participate in the initial training.

Ongoing PBIS Practices

After the first year, the principals participating in the survey revealed variations in the amount of on-going PBIS training and staff development with students and staff. In *Figure 4*, I displayed the levels of staff development and student training practice in each school.

Figure 4. On-going Staff and Student PBIS Practices

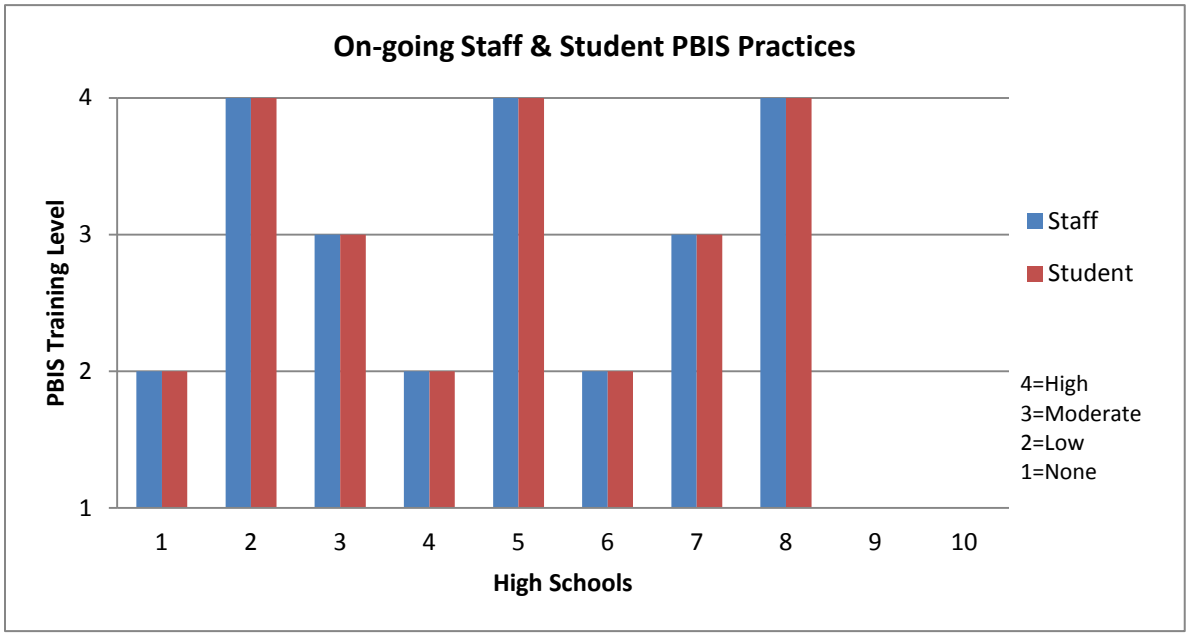

Figure 4. I described the implementation practices in HS 2, HS 5, and HS 8 as *high*. The principals at these schools integrated the staff and student awareness and training of the PBIS concepts multiple times during the year into various activities. I described the implementation practices in HS 3 and HS 7 as *moderate*. The leadership team reviewed PBIS a few times a year and as necessary with teachers in need of additional support. I described the implementation practices of HS 1, HS 4, and HS 6 as *low*. These schools completed the minimal amount of review with staff and students, usually once a year at the beginning of year. HS 9 and HS 10 were rated as *none* in both of these criterions.

Staff Perceptions of PBIS Practices

The Effective Behavior Support (EBS) survey was designed by Sugai, Horner & Todd (2000) to help school administrators evaluate the current status and areas of growth in four areas of support provided by the PBIS system; the host environment, the team management of data, non-classroom settings/active supervision, and the classroom (Sugai, Homer, &Todd, 2000). The EBS Survey was administered to staff members at the end of each school year. According to the designers of the survey, all staff members should take the survey the initial year. The district in this study administered the survey electronically to every staff member in schools using the PBIS system.

During this study, the EBS Survey was administered during the 2007-2008 through 2010-2011 school years. The 2007-2008 & 2008-2009 surveys contained 45 questions. The 2009-2010 survey contained 27 questions. The 2010-2011 survey contained 28 questions. For comparative purposes, only the common questions were reviewed; therefore only the twenty-seven common questions were examined. I displayed the quantity of questions examined by the researcher in each evaluated support area of PBIS in Table 40.

Table 40

Number of EBS Survey Questions in each Category

Category of Support	Number of Questions
Host Environment (HE)	4
Team Management Data (TMD)	8
Non-Classroom/Active Supervision (NC)	6
Classroom (CL)	9
Total Questioned Analyzed	27

The EBS questions were asked in two parts: current status and priority for improvement. However, since the purpose of this study was to analyze the current level of implementation; the answers related to the current status were recorded. In Table 78 (appendix F), a summary of each high school's EBS survey results is displayed.

Survey participants were able to rate each of the areas by selecting whether the process was in place (*high*), partially in place (*moderate*), or not in place (*low*). Blank answer choices were not included in the analysis. The categorization of the perspective of the staff in each area was completed in two parts; first by totaling the number of "in place" choice selections for each question in the category then dividing the resulting number by the number of survey participants for each category. A high level was assigned to the category if the resulting percentage was 70% or higher. A moderate level was assigned if the resulting percentage was between 50 and 69%. A low level was assigned if the resulting percentage was at or below 49%. The levels were assigned a corresponding numerical value. The high

level was 4, the moderate level was 3 and the low level was 2. Then the values for each year were totaled to give a total EBS for the span of the study.

Results of Initial Research Task 2

There were 6 factors in the Initial Research Task 1 used to calculate the level of implementation at the campus level: a) the number of years the school participated in PBIS; b) the composition of the leadership team; c) the composition of the PBIS motto and matrix development team; d) the initial training; e) the ongoing training practices for staff and students; and f) the EBS survey results. The calculations for High Schools 1-8 are given below in Table 41.

Table 41

The Calculations of Factors for Research Task 2

Factor	HS 1	HS 2	HS 3	HS 4	HS 5	HS 6	HS 7	HS 8
A	5	5	4	2	4	4	3	3
B	3	3	2	4	3	3	3	2
C	3	1	4	6	3	4	3	3
D	4	4	4	4	4	4	4	4
E	2	4	3	4	4	2	3	4
F	46	61	47	25	42	52	46	47
Total	63	78	64	45	60	69	62	63

The goal of the Initial Research Task 2 was to determine the overall level of implementation at the campus level. The information obtained in the Initial Research Task 1 was used to categorize each school as *high, moderate, low,* or *none*. HS 2 had the highest value and was therefore categorized at a *high* level of implementation. HS 1, 3, 5, 6, 7, and 8 ranged from 60 to 69 which fell close to the mean value of 63 and were therefore categorized as *moderate*. HS 4 had the lowest value of 45 and was categorized at a *low* level of implementation. High Schools 9 and 10 did not participate in PBIS; therefore, these schools were categorized with a value of *none* for the level of PBIS implementation. For quantitative purposes, I assigned the *high* level a value of 4, a *moderate* level a value of 3, a *low* level a value of 2, and *none* a value of 1.

Research Questions - An Analysis of the Outcome Variables

To answer the research questions, I recorded and analyzed the outcome variables of the study. The variables I evaluated within each high school were the Discipline Infraction Rate, the Math TAKS Pass Rate, the Reading TAKS Pass Rate, the Attendance Rate, the Dropout Rate and the Graduation Rate. Data were utilized from school years 2007 to 2011 with the exception of High Schools 7 & 8 which were evaluated from 2009 to 2011.

The quantitative data were analyzed through the computer software program Statistical Package for the Social Sciences (SPSS). Descriptive and parametric analytical techniques were employed to define, describe and analyze the data. The findings were presented in the form of figures and tables. All statistical tests were conducted at an alpha level of 0.05.

The differences between the levels of PBIS implementation and year on the aggregated student performance variables were examined with a two factor factorial mixed

model analysis of variance, ANOVA (Fields, 2009). Mauchly's test of sphericity was conducted to determine if the variance/covariance matrix was significantly different from an identity matrix (Fields, 2009). To determine whether there was significance in the tests of within-subjects, one of two tests was used. If sphericity was met, the results of the Sphericity Assumed were used. If sphericity was not met, the results of the Lower-bound were used (Fields, 2009). If significance was found in the within-subjects test for interaction, a Simple Main Effects (SME) analysis was performed. If the SME was significant, the value of the Sidak test was used to determine where significance occurred. If a significant main effect for Year was obtained, trend analysis and Sidak were used to probe the difference.

The Discipline Infraction Rate

The number of discipline infractions for the high schools was obtained from the school district. The number of discipline infractions was transformed into a percentage rate by dividing the number of incidents by the student population for each high school. A display of the resulting values is found in Tables 79 – 88 (Appendix G).

The values of the Discipline Infraction Rate of the *high* PBIS implementation high school, HS 2, ranged from 116.6% to 169.7%.The values of the *moderate* high schools, HS 1, 3, 5, 6, 7, and 8 were as follows: (a) values of the Discipline Infraction Rate of HS 1 ranged from 112.6% to 176.4%, (b) values of the Discipline Infraction Rate of HS 3 ranged from 68.1% to 95.7%, (c) values of the Discipline Infraction Rate of HS 5 ranged from 82.3% to 108.4%, (d) values of the Discipline Infraction Rate of HS 6 ranged from 79.9% to 115.8%, (e) values of the Discipline Infraction Rate of HS 7 ranged from 148.4% to 171.7%, and (f) values of the Discipline Infraction Rate of HS 8 ranged from 68.1% to 95.7%.

The values of the *low* PBIS implementation high school, HS 4, ranged from 86.2% to 116.3%. The values of the *none* PBIS implementation high schools, HS 9 and 10 were as follows: (a) values of the Discipline Infraction Rate of HS 9 ranged from 82% to 119.9%, (b) values of the Discipline Infraction Rate of HS 10 for each year were all under 100%, and (c) the range of the Discipline Infraction Rate was 54.4% to 92.3%. For all schools, the Discipline Infraction Rates that were less than 100% represent a rate less than the student population. The values over 100% indicate that the percentage of Discipline Infraction Rate was greater than the student population.

The Discipline Infraction Rate for the Differing Levels of PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized transformed Discipline Infraction Rate data was proportional to an identity matrix. The assumption of sphericity was met (p= 0.241). A two-factor factorial mixed model analysis of the Discipline Infraction Rate Level of PBIS Implementation and Years was conducted. In Table 42, there is a display of the within-subject effects.

In Table 42, with Sphericity assumed, there was not a significant interaction for Years and Level of PBIS implementation (p=0.263) yet there was a large effect size of 0.400. However, there was a significant main effect obtained for Years (p=0.003) along with a large effect of 0.469 and a high power of 0.935. A post hoc Sidak test and trend analysis was conducted on the Years. The results of the Sidak test are presented in Table 43.

Table 42

The Discipline Infraction Rate Within-Subjects Effect Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	3,159.903	4	789.976	5.308	.003	.469	21.232	.935
Years * Level	Sphericity Assumed	2,385.622	12	198.802	1.336	.263	.400	16.029	.553
Error(DiscRateYear)	Sphericity Assumed	3,571.925	24	148.830					

a. Computed using alpha = .05

Table 43

The Discipline Infraction Rate Sidak Test for the Differing Levels of PBIS Implementation between the Years

(I) Years	(J) Years	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-3.787	4.560	.997	-23.377	15.802
	3	20.171	10.033	.615	-22.929	63.270
	4	15.133	9.584	.836	-26.036	56.302
	5	20.367	5.992	.136	-5.374	46.107
2	1	3.787	4.560	.997	-15.802	23.377
	3	23.958	8.438	.259	-12.290	60.207
	4	18.921	6.861	.285	-10.555	48.396
	5	24.154*	4.205	.012	6.092	42.217
3	1	-20.171	10.033	.615	-63.270	22.929
	2	-23.958	8.438	.259	-60.207	12.290
	4	-5.037	3.983	.946	-22.149	12.074
	5	.196	7.400	1.000	-31.595	31.987
4	1	-15.133	9.584	.836	-56.302	26.036
	2	-18.921	6.861	.285	-48.396	10.555
	3	5.037	3.983	.946	-12.074	22.149
	5	5.233	6.349	.997	-22.039	32.506
5	1	-20.367	5.992	.136	-46.107	5.374
	2	-24.154*	4.205	.012	-42.217	-6.092
	3	-.196	7.400	1.000	-31.987	31.595
	4	-5.233	6.349	.997	-32.506	22.039

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Sidak.

Table 44

The Discipline Infraction Rate Main Effect Within-Subjects Contrast Test for the Differing Levels of PBIS Implementation and Years

Source	Year	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Linear	2135.172	1	2135.172	12.376	.013	.673	12.376	.832
	Quadratic	51.426	1	51.426	.201	.670	.032	.201	.067
	Cubic	183.225	1	183.225	2.397	.173	.285	2.397	.258
	Order 4	790.080	1	790.080	8.775	.025	.594	8.775	.696
Error(Years)	Linear	1035.143	6	172.524					
	Quadratic	1538.026	6	256.338					
	Cubic	458.558	6	76.426					
	Order 4	540.198	6	90.033					

a. Computed using alpha = .05

Table 45

The Discipline Infraction Rate Between-Subjects Effect Test for the Differing Levels of PBIS Implementation

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	10452.618	3	3,484.206	.589	.644	.227	1.767	.115
Error	35501.980	6	5,916.997					

a. Computed using alpha = .05

In Table 43, with the Sidak test, there is a statistically significant difference between Years 2 and 5 (p=0.012) for the Discipline Infraction Rate. In Table 44, there is a display of the trend analysis for the Year. I identified a statically significant linear trend (p=0.013) with a large effect size of 0.673 and quartic trend (p=0.025) with a large size of 0.594 for the Year. However, the majority, 2135.172, of the total sums of squares, 3139.903, was explained in a linear trend. This decreasing linear trend can be viewed in *Figure 5*.

In Table 45, there is a display of the main effect of Years for the differing Levels of PBIS implementation. There was not a statically significant value for the between-subjects effects for the differing Levels of PBIS implementation (p=0.644). In *Figure 5*, there is a display of the Discipline Infraction Rate mean values for the differing Levels of PBIS implementation.

Figure 5. The Discipline Infraction Rates Mean Values for the Differing Levels of PBIS Implementation across the Years

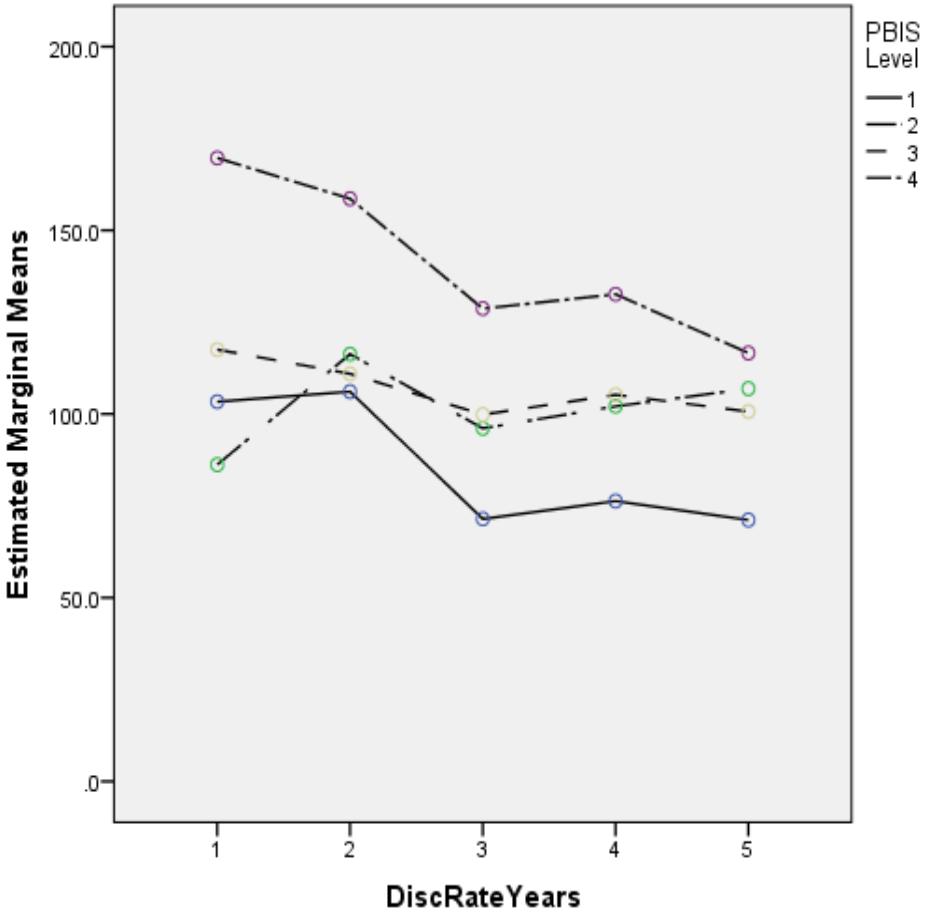

Figure 5. The values for the differing Levels of PBIS implementation were as follows: (a) *high*, 169.7%, 158.6%, 128.7%. 132.6%, and 116.6%; (b) *moderate*, 117.5%, 110.9%, 99.9%, 105.3%, and 100.7%; (c) *low*, 86.2%, 116.3%, 96.1%, 102.1%, and 106.9%; (d) *none*, 103.4%, 106.1%, 71.5%, 76.3%, and 71.2% across the years of the study. The trend was decreasing linearly for all levels.

The Discipline Infraction Rate for the PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized transformed Discipline Infraction Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.189). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted. In Table 46, there is a display of the within-subject effects.

In Table 46, with Sphericity assumed, there was not a significant interaction for Years and PBIS implementation (p=0.448). However, there was a significant main effect obtained for Years (p=0.001) along with a large effect size of 0.436 and a high power of 0.974. A post hoc Sidak test and trend analysis were conducted on the Years. The results of the Sidak test are presented in Table 47.

Table 46

The Discipline Infraction Rate Within-Subjects Effects Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	4119.410	4	1029.852	6.188	.001	.436	24.753	.974
Years * PBIS	Sphericity Assumed	632.041	4	158.010	.949	.448	.106	3.798	.266
Error(DiscRateYears)	Sphericity Assumed	5325.506	32	166.422					

a. Computed using alpha = .05

Table 47

The Discipline Infraction Rate Sidak Test for PBIS Implementation between the Years

(I) Years	(J) Years	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-.088	6.228	1.000	-23.857	23.682
	3	24.525	9.809	.314	-12.908	61.958
	4	19.456	9.596	.552	-17.167	56.080
	5	24.450	8.857	.221	-9.351	58.251
2	1	.088	6.228	1.000	-23.682	23.857
	3	24.612	7.530	.108	-4.124	53.349
	4	19.544	6.368	.143	-4.759	43.846
	5	24.538*	5.458	.020	3.709	45.366
3	1	-24.525	9.809	.314	-61.958	12.908
	2	-24.612	7.530	.108	-53.349	4.124
	4	-5.069	3.347	.842	-17.844	7.706
	5	-.075	6.610	1.000	-25.301	25.151
4	1	-19.456	9.596	.552	-56.080	17.167
	2	-19.544	6.368	.143	-43.846	4.759
	3	5.069	3.347	.842	-7.706	17.844
	5	4.994	5.709	.995	-16.795	26.782
5	1	-24.450	8.857	.221	-58.251	9.351
	2	-24.538*	5.458	.020	-45.366	-3.709
	3	.075	6.610	1.000	-25.151	25.301
	4	-4.994	5.709	.995	-26.782	16.795

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Sidak.

Table 48

The Discipline Infraction Rate Main Effect Within-Subjects Contrast Test for PBIS Implementation and Years

Source	DiscRateYears	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Linear	2998.110	1	2998.110	10.288	.012	.563	10.288	.802
	Quadratic	174.163	1	174.163	.835	.387	.095	.835	.128
	Cubic	137.124	1	137.124	1.534	.251	.161	1.534	.194
	Order 4	810.013	1	810.013	10.597	.012	.570	10.597	.813
Error(Years)	Linear	2331.237	8	291.405					
	Quadratic	1667.673	8	208.459					
	Cubic	715.097	8	89.387					
	Order 4	611.499	8	76.437					

a. Computed using alpha = .05

Table 49

The Discipline Infraction Rate Between-Subjects Effects Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	4924.289	1	4924.289	.960	.356	.107	.960	.139
Error	41030.309	8	5128.789					

a. Computed using alpha = .05

In Table 47, with the Sidak test, there was a statistically significant difference between Years 2 and 5 (p=0.020) for the Discipline Infraction Rate. In Table 48, there is a display of the trend analysis for the Years. I identified a statistically significant linear trend (p=0.012) with a large effect size of 0.563 and quartic trend (p=0.012) with a large effect size of 0.570 for the Years. However, the majority of the sums of squares, 2998.110, of the total sum of squares, 4119.410, were explained in a linear trend. In *Figure 6*, the decreasing linear trend can be viewed across the years of study for PBIS implementation and Years.

In Table 49, there is a display of the between-subjects effects of the Discipline Infraction Rate for the PBIS implementation. There was not a statistically significant value for the between-subjects effects for the PBIS and non-PBIS implementation (p=0.356). In *Figure 6*, there is a display of the Discipline Infraction Rate mean values for the PBIS implementation across the Years.

Figure 6. The Discipline Infraction Rate Mean Values for PBIS Implementation across the Years

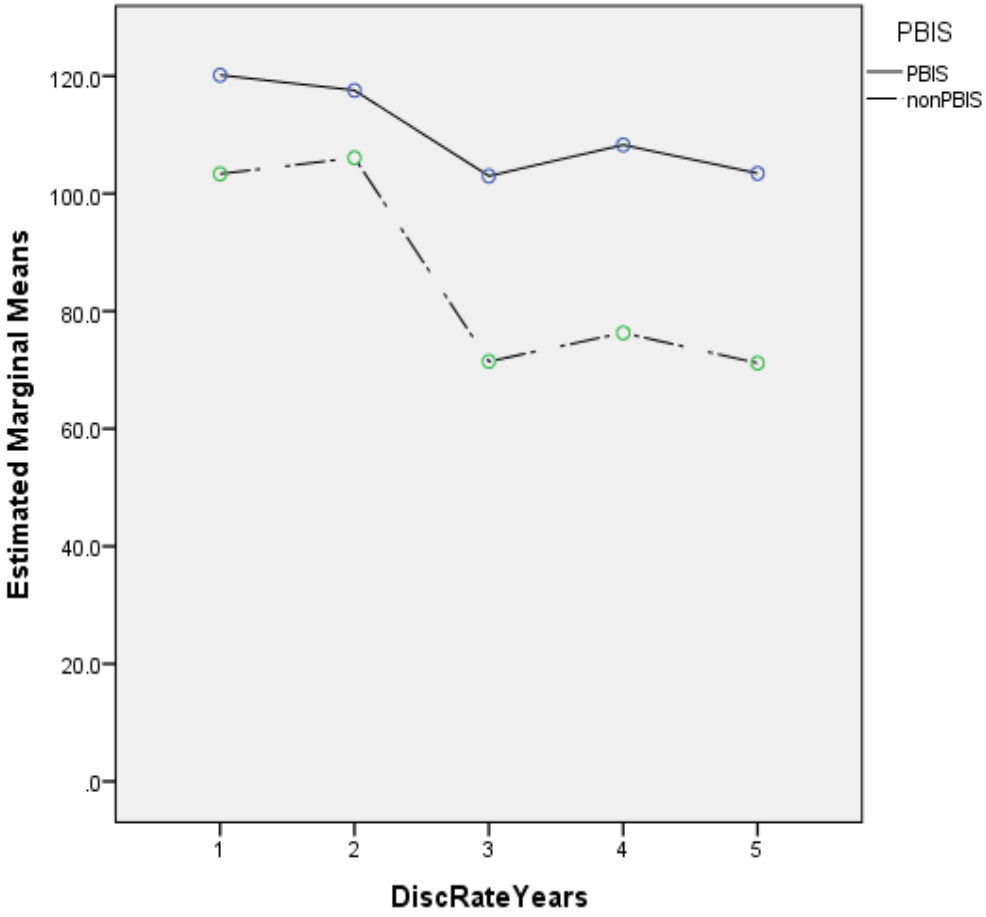

Figure 6. The recorded mean values for the Discipline Infraction Rate for the (a) PBIS schools were 102.2%, 117.6%, 103%, 108.3%, and 103.4%, (b) non-PBIS schools were 103.4%, 106.1%, 71.5%, 76.3%, and 71.2% across the years of the study. There was a decreasing linear trend in this figure.

The Math & Reading TAKS Pass Rates

The academic performance of the aggregated student groups was measured by the performance on the math and reading TAKS. In Figures 17 – 26 (Appendix H) there is a display of results of the math and reading TAKS scores for the High Schools 1-10. Data were revealed from school years 2007 to 2011 with the exception of High Schools 7 & 8 which were examined from 2009 to 2011.

The values of Math TAKS Pass Rate of the *high* PBIS implementation high school, HS 2, were as follows. The Math TAKS Pass Rate ranged from 71% to 78% and the Reading TAKS Pass Rate ranged from 90% to 92%. The Math and Reading TAKS Pass Rate for the *moderate* PBIS implementation level high schools, HS 1, 3, 5, 6, 7 and 8 were as follows (a) HS 1, the Math TAKS Pass Rate ranged from 64% to 72% and the Reading TAKS Pass Rate ranged from 89% to 93%; (b) HS 3, the Math TAKS Pass Rate ranged from 85% to 91% and the Reading TAKS Pass Rate ranged from 94% to 97%; (c) HS 5, the Math TAKS Pass Rate ranged from 77% to 85% and the Reading TAKS Pass Rate ranged from 90% to 95%; (d) HS 6, the Math TAKS Pass Rate ranged from 76% to 83% and the Reading TAKS Pass Rate ranged from 88% to 94%; (e) HS 7, the Math TAKS Pass Rate ranged from 69% to 77% and the Reading TAKS Pass Rate ranged from 92% to 94%; (f) HS 8, the Math TAKS Pass Rate ranged from 92% to 93% and the Reading TAKS Pass Rate ranged from 98% to 99%.

For the *low* PBIS implementation level school, HS 4, the values of the Math TAKS Pass Rate ranged from 74% to 84% and the Reading TAKS Pass Rate ranged from 89% to 96%. For the schools with *none* PBIS implementation, HS 9 and 10, the TAKS pass rates were as follows (a) HS 9, the Math TAKS Pass Rate ranged from 75% to 83% and the

Reading TAKS Pass Rate ranged from 91% to 94%; (b) HS 10, the Math TAKS Pass Rate ranged from 87% to 94% and the Reading TAKS Pass Rate ranged from 97% to 98%.

The Math TAKS Pass Rate for the Differing Levels of PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Math TAKS Pass Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.320). A two-factor factorial mixed model analysis of the Level of PBIS Implementation and Years was conducted. In Table 50, there is a display of the within-subject effects.

In Table 50, with Sphericity assumed, there was not a significant value was obtained for Years and Level of PBIS implementation (p=0.581) yet there was a large effect size of 0.304. However, a statistically significant main effect was obtained for Years (p=0.000) along with a large effect size of 0.768 and a high power of 1.000. A post hoc Sidak test and trend analysis were conducted on the Years. The results of the Sidak test are presented in Table 51.

Table 50

The Math TAKS Pass Rate Within-Subjects Effect Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	256.228	4	64.057	19.897	.000	.768	79.588	1.000
Years * Level	Sphericity Assumed	33.810	12	2.818	.875	.581	.304	10.502	.361
Error(TAKSMath)	Sphericity Assumed	77.267	24	3.219					

a. Computed using alpha = .05

Table 51

The Math TAKS Pass Rate Sidak Test for the Differing Levels of PBIS Implementation between the Years

(I) Years	(J) Years	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-.958	.779	.954	-4.304	2.387
	3	-3.233	1.477	.522	-9.578	3.112
	4	-7.067*	1.077	.006	-11.692	-2.441
	5	-6.858*	.793	.001	-10.265	-3.452
2	1	.958	.779	.954	-2.387	4.304
	3	-2.275	1.281	.740	-7.779	3.229
	4	-6.108*	.995	.009	-10.382	-1.834
	5	-5.900*	1.017	.011	-10.267	-1.533
3	1	3.233	1.477	.522	-3.112	9.578
	2	2.275	1.281	.740	-3.229	7.779
	4	-3.833*	.694	.015	-6.814	-.853
	5	-3.625	1.242	.237	-8.959	1.709
4	1	7.067*	1.077	.006	2.441	11.692
	2	6.108*	.995	.009	1.834	10.382
	3	3.833*	.694	.015	.853	6.814
	5	.208	.684	1.000	-2.729	3.146
5	1	6.858*	.793	.001	3.452	10.265
	2	5.900*	1.017	.011	1.533	10.267
	3	3.625	1.242	.237	-1.709	8.959
	4	-.208	.684	1.000	-3.146	2.729

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Sidak.

Table 52

The Math TAKS Pass Rate Main Effect Within-Subject Contrast Test for the Differing Levels of PBIS Implementation and Years

Source	Years	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Linear	235.818	1	235.818	68.452	.000	.919	68.452	1.000
	Quadratic	.257	1	.257	.044	.841	.007	.044	.054
	Cubic	17.227	1	17.227	12.213	.013	.671	12.213	.828
	Order 4	2.925	1	2.925	1.353	.289	.184	1.353	.167
Error(Years)	Linear	20.670	6	3.445					
	Quadratic	35.164	6	5.861					
	Cubic	8.463	6	1.411					
	Order 4	12.969	6	2.162					

a. Computed using alpha = .05

Table 53

The Math TAKS Pass Rate Between-Subjects Effects Test for the Differing Levels of PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	428.091	3	142.697	.365	.781	.154	1.095	.089
Error	2345.100	6	390.850					

a. Computed using alpha = .05

In Table 51, with the Sidak test, there was a statistically significant difference between Years 1 and 4 (p=0.006), Years 1 and 5 (p=0.001), Years 2 and 4 (p=0.009), Years 2 and 5 (p=0.011) and Years 3 and 4 (p=0.015) for the Math TAKS Pass Rate. In Table 52, there is a display of the trend analysis for the Years.

In Table 52, there was a statistically significant linear trend (p=0.000) along with a large effect size of 0.919 and a high power of 1.000 and cubic trend (p=0.013) along with a large effect size of 0.671 across the years of the study. However, the majority of the sums of squares, 235.818, of the total sums of squares, 256.228, could be explained in a linear fashion. In *Figure 7*, the increasing linear trend can be viewed in across the years of the study for the Levels of PBIS implementation. In Table 53, there is a display of the tests between-subjects effects for the Math TAKS Pass Rate.There was not a statistically significant between-subjects test value obtained for the Math TAKS Pass Rate for the differing Levels of PBIS implementation (p=0.781). In *Figure 7*, there is a display of the Math TAKS Pass Rate mean values for the differing Levels of PBIS implementation across the Years.

Figure 7. The Math TAKS Pass Rate Mean Values for the Differing Levels of PBIS Implementation across the Years

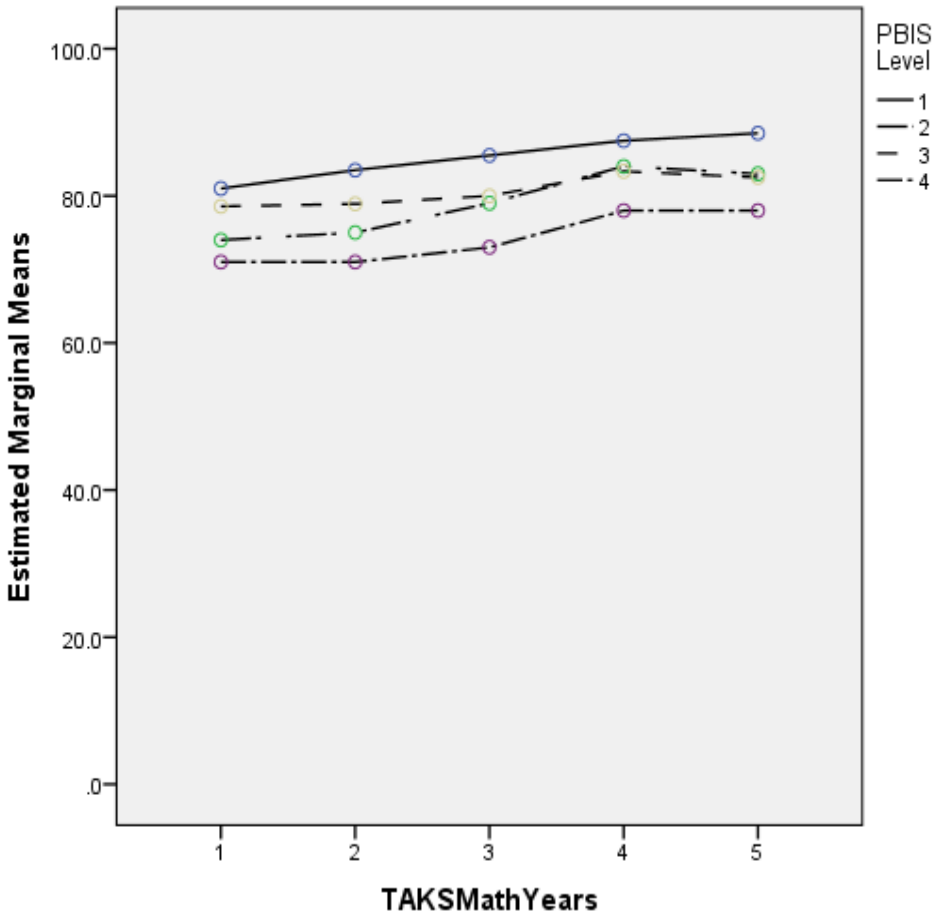

Figure 7. The values for the differing Levels of PBIS implementation were as follows: (a) *high*, 71%, 71%, 73%, 78%, and 78%; (b) *moderate*, 78.6%, 79%, 80%, 83%, and 82.5%; (c) *low*, 74%, 75%, 79%, 84%, and 83%; (d) *none*, 81%, 84.5%, 85.5%, 87.5%, and 88.5%. There was an increasing linear trend for the Math TAKS Pass Rate across the years of the study.

The Math TAKS Pass Rate for PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Math TAKS Pass Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.053). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted. In Table 54, there is a display of the within-subject effects.

In Table 54, with Sphericity assumed, there was not a significant interaction for Years and PBIS implementation (p=0.625). However, a significant main effect (p=0.000) was obtained along with a large effect size of 0.657 and a high power of 1.000 for Years. A post hoc Sidak test and trend analysis were conducted on the Years. The results of the Sidak test are presented in Table 55.

Table 54

The Math TAKS Pass Rate Within-Subjects Effects Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	196.561	4	49.140	15.322	.000	.657	61.289	1.000
Years * PBIS	Sphericity Assumed	8.449	4	2.112	.659	.625	.076	2.634	.192
Error(TAKSMathYears)	Sphericity Assumed	102.628	32	3.207					

a. Computed using alpha = .05

Table 55

The Math TAKS Pass Rate Sidak Test for PBIS Implementation between the Years

(I) Years	(J) Years	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-1.438	.661	.469	-3.960	1.085
	3	-3.225	1.322	.339	-8.269	1.819
	4	-6.100*	1.145	.007	-10.470	-1.730
	5	-6.225*	.983	.002	-9.975	-2.475
2	1	1.438	.661	.469	-1.085	3.960
	3	-1.788	1.140	.815	-6.137	2.562
	4	-4.662*	1.052	.022	-8.679	-.646
	5	-4.788*	1.087	.023	-8.937	-.638
3	1	3.225	1.322	.339	-1.819	8.269
	2	1.788	1.140	.815	-2.562	6.137
	4	-2.875*	.648	.022	-5.348	-.402
	5	-3.000	1.100	.232	-7.200	1.200
4	1	6.100*	1.145	.007	1.730	10.470
	2	4.662*	1.052	.022	.646	8.679
	3	2.875*	.648	.022	.402	5.348
	5	-.125	.585	1.000	-2.356	2.106
5	1	6.225*	.983	.002	2.475	9.975
	2	4.788*	1.087	.023	.638	8.937
	3	3.000	1.100	.232	-1.200	7.200
	4	.125	.585	1.000	-2.106	2.356

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Sidak.

Table 56

The Math TAKS Pass Rate Main Effect Within-Subjects Contrast Test for PBIS Implementation and Years

Source	TAKSMathYears	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Linear	187.416	1	187.416	34.865	.000	.813	34.865	.999
	Quadratic	1.081	1	1.081	.237	.639	.029	.237	.072
	Cubic	6.150	1	6.150	4.884	.058	.379	4.884	.493
	Order 4	1.914	1	1.914	1.169	.311	.127	1.169	.159
Error(Years)	Linear	43.004	8	5.375					
	Quadratic	36.451	8	4.556					
	Cubic	10.074	8	1.259					
	Order 4	13.099	8	1.637					

a. Computed using alpha = .05

Table 57

The Math TAKS Pass Rates Between-Subjects Effects Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	246.864	1	246.864	.782	.402	.089	.782	.122
Error	2526.327	8	315.791					

a. Computed using alpha = .05

In Table 55, with the Sidak test, there was a statistically significant difference between Years 1 and 4 (p=0.007), Years 1 and 5 (p=0.002), Years 2 and 4 (p=0.022), Years 2 and 5 (p=0.023), and Years 3 and 4 (p=0.022) for the Math TAKS Pass Rate. In Table 56, there is a display of the trend analysis for the Math TAKS Pass Rate Year.

In Table 56, I identified a statistically significant linear trend (p=0.000) observed across the years of the study with a large effect size of 0.813 and a high power of 0.999. The majority of the sum of squares was explained in a linear trend. In *Figure 8*, the increasing linear trend can be viewed across the Years of study for the Math TAKS Pass Rate. In Table 57, there is a display of the between-subjects effects for the Math TAKS Pass Rate for PBIS implementation.

In Table 57, there was not a statistically significant between-subject effects test value obtained for the Math TAKS Pass Rates of PBIS implementation (p=0.089). In *Figure 8*, there is display of the Math TAKS Pass Rate mean values for PBIS implementation across the Years.

Figure 8. The Math TAKS Pass Rate Mean Values for PBIS Implementation across the Years

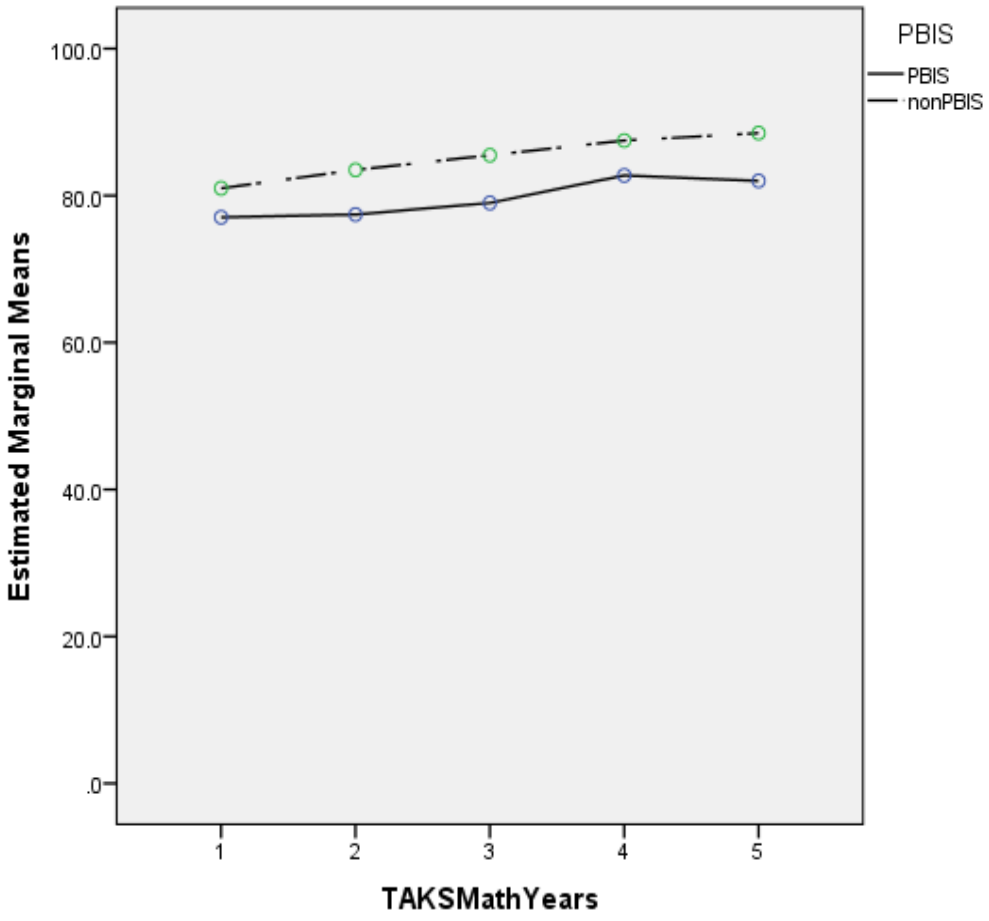

Figure 8. The recorded mean values for the (a) PBIS schools were 77.1%, 77.4%, 79.0%, 82.8%, and 82.0%; and (b) non- PBIS schools were 81%, 84.5%, 85.5%, 87.5%, and 88.5%. The mean values had a positive linear trend.

The Reading TAKS Pass Rate for the Differing Levels of PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Reading TAKS Pass Rate data was proportional to an identity matrix. The assumption of sphericity was not met (p= 0.009). A two-factor factorial mixed model analysis of the Level of PBIS Implementation and Years was conducted. In Table 58, there is a display of the within-subject effects.

In Table 58, with Lower-bound, there was not a significant interaction for Years and Level of PBIS implementation (p=0.747). Also, there is not a significant main effect obtained across the years (p=0.101). In Table 59, there is a display of the between-subjects effects of the Reading TAKS Pass Rates for the differing Levels of PBIS implementation.

Table 58

The Reading TAKS Pass Rate Within-Subjects Effects Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Lower-bound	64.625	1.000	64.625	3.752	.101	.385	3.752	.371
Years * Level	Lower-bound	21.600	3.000	7.200	.418	.747	.173	1.254	.095
Error(TAKSReadYears)	Lower-bound	103.336	6.000	17.223					

Table 59

The Reading TAKS Pass Rates Between-Subjects Effects Test for the Differing Levels of PBIS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	34.500	3	11.500	.189	.900	.086	.567	.070
Error	365.324	6	60.887					

a. Computed using alpha = .05

In Table 59, there was not a statistical significance in the between-subjects effect of the Reading TAKS Pass Rates at the differing Levels of PBIS implementation (p=0.900). In *Figure 9*, there is a display of the Reading TAKS Pass Rate means for each of the differing Levels of PBIS implementation.

Figure 9. The Reading TAKS Pass Rate Mean Values for the Differing Levels of PBIS Implementation across the Years

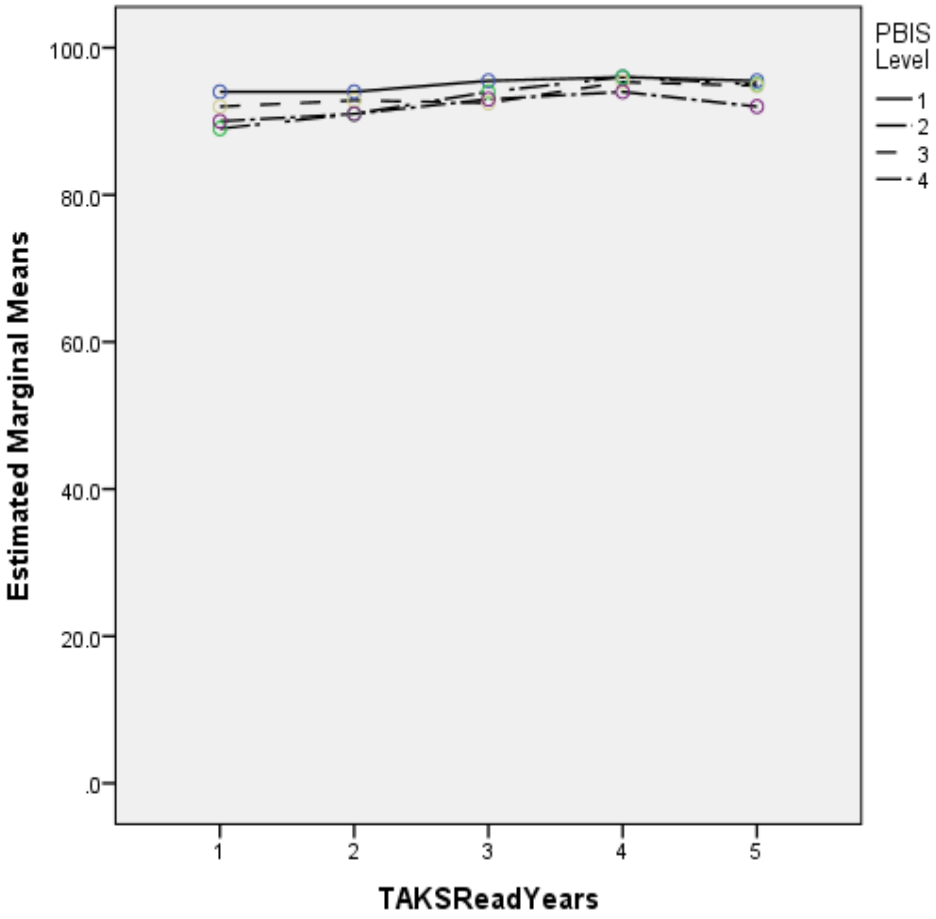

Figure 9. The values for the differing Levels of PBIS implementation were as follows: (a) *high,* 90%, 91%, 93%, 94%, and 92%; (b) *moderate*, 92%, 92.8%, 92.5%, 95.3, and 94.8%; (c) *low,* 89%, 91%, 94%, 96%, and 95%; and (d) *none*, 94%, 94%, 95.5%, 96%, and 95.5%.

Reading TAKS Pass Rate for PBIS Implementation and Years

Mauchly's Test of Sphericity is conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Reading TAKS Pass Rate data is proportional to an identity matrix. The assumption of sphericity is not met (p=0.001). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted. In Table 60, there is a display of the within-subject effects.

In Table 60, with Lower-bound, there was not a significant interaction for Years and PBIS implementation (p=0.566). There was also no significant main effect obtained for Years (p=0.149). In Table 61, there is a display of the tests between subjects for the Reading TAKS Pass Rates of PBIS implementation.

Table 60

The Reading TAKS Pass Rate Within-Subjects Effects Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Lower-bound	38.150	1.000	38.150	2.552	.149	.242	2.552	.291
Years * PBIS	Lower-bound	5.350	1.000	5.350	.358	.566	.043	.358	.083
Error(TAKSReadYears)	Lower-bound	119.586	8.000	14.948					

a. Computed using alpha = .05

Table 61

The Reading TAKS Pass Rate Between-Subjects Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	24.500	1	24.500	.522	.490	.061	.522	.098
Error	375.324	8	46.916					

a. Computed using alpha = .05

In Table 61, there was not a statistically significant value obtained for the between-subjects effects test (p=0.490). In *Figure 10*, there is a display of the Reading TAKS Pass Rate mean values for PBIS implementation across the Years.

Figure 10. The Reading TAKS Pass Rate Mean Values for PBIS Implementation across the Years

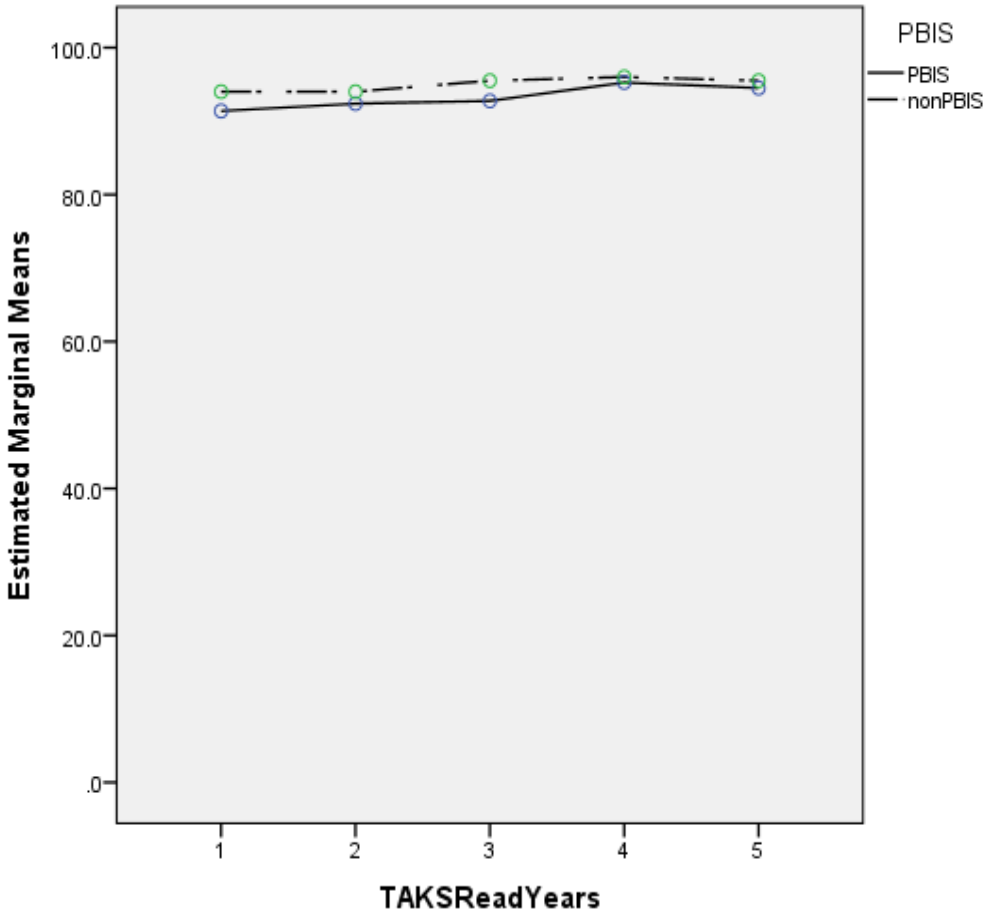

Figure 10. The recorded mean values are as follows: (a) PBIS schools were 91.4%, 92.4%, 92.8%, 95.3%, and 94.5%; and (b) non-PBIS schools are 94%, 94%, 95.5%, 96%, and 95.5%. There was an increasing linear trend for the Reading TAKS Pass Rate.

The Attendance Rate

According to TEA, the attendance rate was based on the aggregated student attendance for the school year which is the rate of the number of days students are present during the school year (TEA; 2007, 2008, 2009, 2010, 2011 and 2012). The attendance rates of each high school are illustrated in Figures 27 – 36 (Appendix I). Data were revealed from school years 2007 to 2011 with the exception of High Schools 7 & 8 which were observed from 2009 to 2011.

The values of the Attendance Rate of the *high* PBIS implementation high school, HS 2, ranged from 93.8% to 94.8%. The Attendance Rate for the *moderate* PBIS implementation level high schools, HS 1, 3, 5, 6, 7 and 8 ranged as follows: (a) HS 1, 92.4% to 93.9%; (b) HS 3, 93% to 94.3%; (c) HS 5, 93.2% to 94.5%; (d) HS 6, 94.2% to 95.1%; (e) HS 7, 93.2% to 94.2%; and (f) HS 8, 96.1% to 96.5%.

For the low PBIS implementation level school, HS 4, the values of the Attendance Rate ranged from 93.5% to 94.5%. For the schools with no PBIS implementation, HS 9 and 10, the Attendance Rates ranged as follows: (a) HS 9, 93.5% to 94%; and (b) HS 10, 93.4% to 96.5%.

The Attendance Rate for the Differing PBIS Implementation Levels and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Attendance Rate data was proportional to an identity matrix. The assumption of sphericity was met ($p=0.082$). A two-factor factorial

mixed model analysis of Level of PBIS Implementation and Years was conducted. In Table 62, there is a display of the within-subject effects.

In Table 62, with Sphericity assumed, there was not a significant interaction for Years and PBIS implementation (p=0.703). There was also no significant main effect obtained for Years (p=0.082). In Table 63, there is a display of the test between-subjects effect for the Attendance Rate across the differing Levels of PBIS implementation.

In Table 63, a statistically significant value was not obtained between-subject for the Attendance Rate across Years at differing Levels of PBIS implementation. In *Figure 11*, there is a display of the Attendance Rate mean values for the differing levels of PBIS implementation across the Years.

Table 62

The Attendance Rate Within-Subjects Effect Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	2.587	4	.647	2.359	.082	.282	9.435	.591
Years * Level	Sphericity Assumed	2.425	12	.202	.737	.703	.269	8.845	.302
Error(AttdRateYears)	Sphericity Assumed	6.581	24	.274					

a. Computed using alpha = .05

Table 63

The Attendance Rate Between-Subject Effect Test for the Differing Levels of PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	.622	3	.207	.041	.988	.020	.123	.054
Error	30.239	6	5.040					

a. Computed using alpha = .05

Figure 11. The Attendance Rate Mean Values for the Differing Levels of PBIS Implementation across the Years

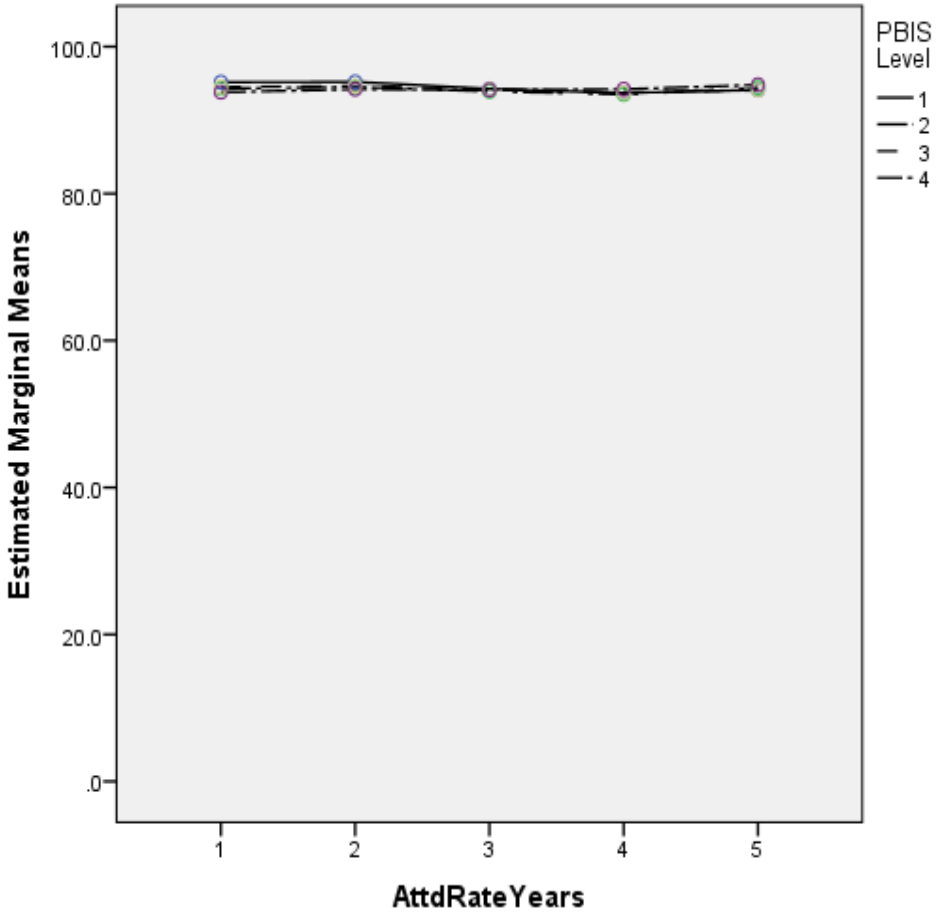

Figure 11. The mean values for the differing Levels of PBIS implementation were as follows: (a) *high*, 93.8, 94.2, 94.1, 94.2, and 94.8%; (b) *moderate*, 94.5%, 94.6%, 94.2%, 93.7, and 94.1%; (c) *low*, 94.3%, 94.5%, 93.9%, 93.5%, and 94.4%; and (d) *none*, 95.2%, 95.2%, 94.3%, 93.7%, and 94.1%.

The Attendance Rate for PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized transformed Attendance Rate data was proportional to an identity matrix. The assumption of sphericity was not met (p=0.005). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted and resulted in a significant main effect across the years. In Table 64, there is a display of the within-subject effects.

In Table 64, with Lower-bound, there was not a significant interaction for Years and PBIS implementation. However, a statistically significant main effect was obtained across the years (p=0.042) with a large effect size of 0.422. A post hoc Sidak test and trend analysis were conducted for Years. The results of the Sidak test are presented in Table 65.

Table 64

The Attendance Rate Within-Subject Effects Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Lower-bound	5.812	1	5.812	5.843	.042	.422	5.843	.565
Years * PBIS	Lower-bound	1.048	1	1.048	1.054	.335	.116	1.054	.148
Error(AttdRateYears)	Lower-bound	7.958	8	.995					

a. Computed using alpha = .05

Table 65

The Attendance Rate Sidak Test for PBIS Implementation between the Years

(I) Years	(J) Years	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1	2	-.112	.081	.899	-.423	.198
	3	.569	.252	.427	-.394	1.532
	4	1.044	.414	.306	-.537	2.624
	5	.613	.316	.605	-.594	1.819
2	1	.112	.081	.899	-.198	.423
	3	.681	.241	.202	-.238	1.601
	4	1.156	.380	.149	-.294	2.606
	5	.725	.271	.248	-.309	1.759
3	1	-.569	.252	.427	-1.532	.394
	2	-.681	.241	.202	-1.601	.238
	4	.475	.230	.529	-.402	1.352
	5	.044	.233	1.000	-.846	.934
4	1	-1.044	.414	.306	-2.624	.537
	2	-1.156	.380	.149	-2.606	.294
	3	-.475	.230	.529	-1.352	.402
	5	-.431	.229	.636	-1.304	.442
5	1	-.613	.316	.605	-1.819	.594
	2	-.725	.271	.248	-1.759	.309
	3	-.044	.233	1.000	-.934	.846
	4	.431	.229	.636	-.442	1.304

Based on estimated marginal means

a. Adjustment for multiple comparisons: Sidak.

With the Sidak test, there was no significance found between any of the years for the Attendance Rate. In Table 66, there is a trend analysis for the Years.

Table 66

The Attendance Rate Main Effect Within-Subjects Contrast Test for PBIS Implementation and Years

Source	Years	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Linear	3.629	1	3.629	6.188	.038	.436	6.188	.589
	Quadratic	.325	1	.325	2.268	.170	.221	2.268	.264
	Cubic	1.850	1	1.850	9.470	.015	.542	9.470	.769
	Order 4	.008	1	.008	.118	.740	.015	.118	.061
Error(Years)	Linear	4.692	8	.586					
	Quadratic	1.148	8	.143					
	Cubic	1.563	8	.195					
	Order 4	.556	8	.070					

a. Computed using alpha = .05

Table 67

The Attendance Rate Between-Subjects Effect Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	.572	1	.572	.151	.708	.019	.151	.064
Error	30.288	8	3.786					

a. Computed using alpha = .05

In Table 66, there was significant linear trend (p=0.038) with a large effect size of 0.436 and significant cubic trend (p=0.015) with a large effect size of 0.542. However, the majority, 3.629, of the total sums of squares 5.812 could be explained in a linear fashion. The linear trend can be viewed in *Figure 12*. In Table 67, there is a display of the main effect of the Attendance Rate for PBIS implementation.

In Table 67, there was not a significant between-subjects effect value obtained for PBIS implementation. In *Figure 12*, there is a display of the Attendance Rate mean values for PBIS and non-PBIS implementation across the years of the study.

Figure 12. The Attendance Rate Mean Values for PBIS Implementation across the Years

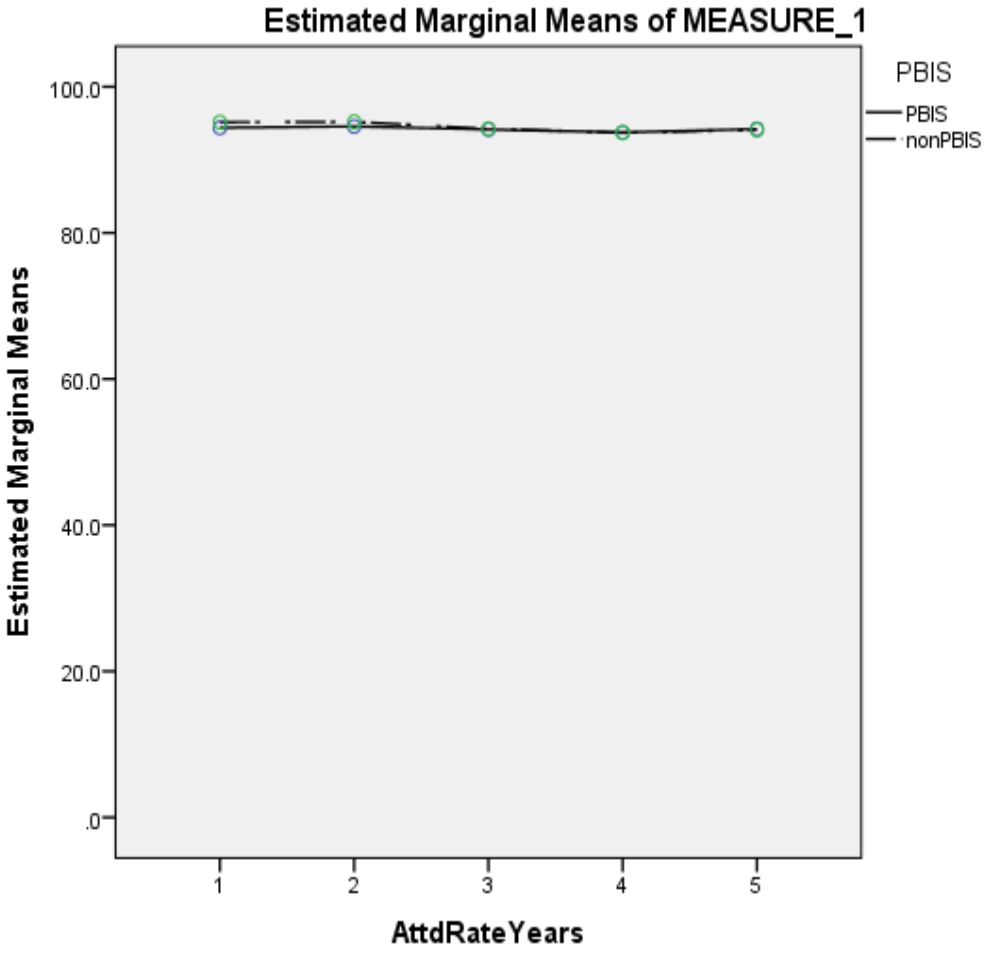

Figure 12. The mean values for the (a) PBIS schools were 94.4%, 94.6%, 94.2%, 93.8%, and 94.2%. The mean values for the non-PBIS schools were 95.2%, 95.2%, 94.3%, 93.7%, and 94.1%.

The Dropout Rate

According to TEA, a dropout was a student who left a public school and did not graduate, received a General Educational Development (GED) certificate, or was not

continuing in school (TEA; 2007, 2008, 2009, 2010, 2011, & 2012). In this study, the dropout rate was the percentage of the aggregated students per school that were measured as a dropout. Data were revealed from school years 2007 to 2011 with the exception of High Schools 7 & 8 which were evaluated from 2009 to 2011. An illustration of the Dropout Rate for High Schools 1-10 can be viewed in Figures 37 – 46 (Appendix J).

The values of the Dropout Rate of the *high* PBIS implementation high school, HS 2, ranged from 0.8% to 1.5%. The Dropout Rate for the *moderate* PBIS implementation level high schools, HS 1, 3, 5, 6, 7 and 8 were as follows: (a) HS 1, ranged from 1.6% to 2.0%; (b) HS 3, ranged from 0.6% to 1.3%; (c) HS 5, ranged from 0.4% to 1.2%; (d) HS 6, ranged from 1.0% to 1.4%; (e) HS 7, ranged from 0.5% to 0.9%; and (f) HS 8, ranged from 0.0% to 0.2%.

For the *low* PBIS implementation level school, HS 4, the values of the Dropout Rate ranged from 0.6% to 1.7%. For *none* PBIS implementation schools, HS 9 and 10, the Dropout Rate were as follows: (a) HS 9, ranged from 0.6% to 1.4%; (b) HS 10, ranged from 0.1% to 0.2%.

The Dropout Rate for the Differing PBIS Implementation Levels and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized transformed Dropout Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.733). A two-factor factorial mixed model analysis for the Level of PBIS Implementation and Years was conducted. In Table 68, there is a display of the within-subject effects.

In Table 68, with Sphericity assumed, there was a statistically significant interaction for Years and Level of PBIS implementation (p=0.047) with a large effect size of 0.526.

However, there was not a significant main effect for Years. An SME was conducted to probe the interaction between the Years and Level of PBIS implementation. In Table 69, there is an SME displayed to probe the differences in Years at each Level of PBIS implementation.

In Table 69, the multivariate test revealed no significance difference in Years for the differing Levels of PBIS implementation. In Table 70, there is a display of the Dropout Rate SME Univariate test for the differences in Levels of PBIS implementation at each Year.

Table 68

The Dropout Rate Within-Subjects Effect Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	.256	4	.064	1.287	.303	.177	5.149	.340
Years * Level	Sphericity Assumed	1.322	12	.110	2.215	.047	.526	26.585	.820
Error(DrpOutRateYear)	Sphericity Assumed	1.193	24	.050					

a. Computed using alpha = .05

Table 69

The Dropout Rate Simple Main Effect Multivariate Test for the Years at Differing Levels of PBIS Implementation

Level		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
1	Pillai's trace	.582	1.044[a]	4	3	.506	.582	4.178	.124
	Wilks' lambda	.418	1.044[a]	4	3	.506	.582	4.178	.124
	Hotelling's trace	1.393	1.044[a]	4	3	.506	.582	4.178	.124
	Roy's largest root	1.393	1.044[a]	4	3	.506	.582	4.178	.124
2	Pillai's trace	.891	6.147[a]	4	3	.084	.891	24.589	.479
	Wilks' lambda	.109	6.147[a]	4	3	.084	.891	24.589	.479
	Hotelling's trace	8.196	6.147[a]	4	3	.084	.891	24.589	.479
	Roy's largest root	8.196	6.147[a]	4	3	.084	.891	24.589	.479
3	Pillai's trace	.378	.457[a]	4	3	.768	.378	1.826	.082
	Wilks' lambda	.622	.457[a]	4	3	.768	.378	1.826	.082
	Hotelling's trace	.609	.457[a]	4	3	.768	.378	1.826	.082
	Roy's largest root	.609	.457[a]	4	3	.768	.378	1.826	.082
4	Pillai's trace	.589	1.077[a]	4	3	.496	.589	4.306	.127
	Wilks' lambda	.411	1.077[a]	4	3	.496	.589	4.306	.127
	Hotelling's trace	1.435	1.077[a]	4	3	.496	.589	4.306	.127
	Roy's largest root	1.435	1.077[a]	4	3	.496	.589	4.306	.127

Each F tests the multivariate simple effects of Year within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

Table 70

The Dropout Rate Simple Main Effect Univariate Test for the Differing Levels of PBIS Implementation across the Years

Year		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
1	Contrast	.984	3	.328	1.078	.427	.350	3.235	.176
	Error	1.825	6	.304					
2	Contrast	.012	3	.004	.011	.998	.006	.034	.051
	Error	2.048	6	.341					
3	Contrast	.278	3	.093	.272	.843	.120	.817	.079
	Error	2.038	6	.340					
4	Contrast	.751	3	.250	.967	.467	.326	2.900	.162
	Error	1.553	6	.259					
5	Contrast	.111	3	.037	.074	.972	.036	.222	.058
	Error	2.993	6	.499					

Each F tests the simple effects of level within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

Table 71

The Dropout Rate Between-Subjects Effect Test for the Differing Levels of PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	.813	3	.271	.175	.909	.081	.526	.068
Error	9.265	6	1.544					

a. Computed using alpha = .05

In Table 70, there was not a significant value obtained for the contrast for the Dropout Rate for Levels at each Year. In Table 71, there is a display of the dropout rate between-subjects effect test for the differing Levels of PBIS implementation.

In Table 71, there was no significant value found for the between-subjects effect for the Dropout Rate at the differing Level of PBIS Implementation. In *Figure 13*, there is a display of the mean values for the Dropout Rate for the differing levels of PBIS implementation.

Figure 13. The Dropout Rate Mean Values for the Differing Levels of PBIS Implementation across the Years

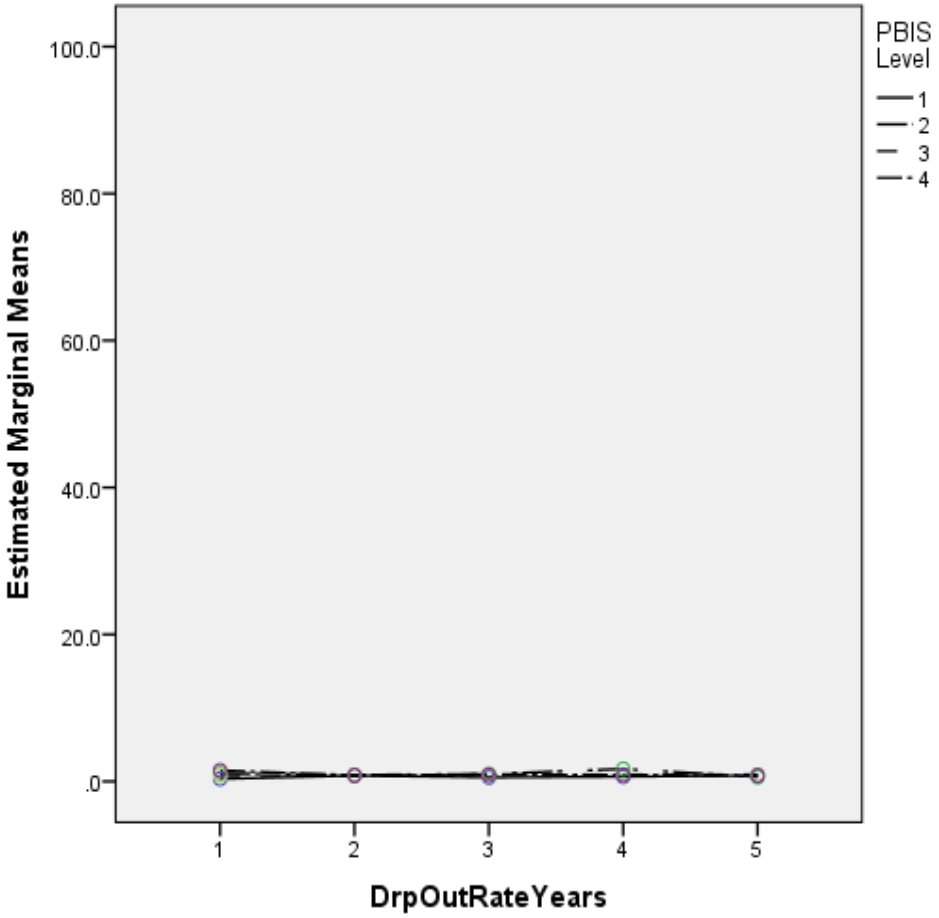

Figure 13. The mean value for the differing Levels of PBIS implementation were as follows: (a) *high*, 1.5%, 0.8%, 0.9%, 0.9%, and 0.8%; (b) *moderate*, 0.8%, 0.78%, 0.97%, 0.9%, and 0.9%; (c) *low*, 1.1%, 0.9%, 1.0%, 1.7%, and 0.6%; and (d) *none*, 0.35%, 0.8%, 0.55%, 0.65%, and 0.8%.

The Dropout Rate for PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Dropout Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.721). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted. In Table 72, there is a display of the within-subject effects.

In Table 72, with Sphericity Assumed, there was not a significant interaction for Years and PBIS implementation (p=0.262). Also, there was no significant main effect (p=0.643). In Table 73, there is a display of the between-subject effect for the Dropout Rate for PBIS implementation.

Table 72

The Dropout Rate Within-Subjects Effect Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	.172	4	.043	.643	.636	.074	2.571	.188
Years * PBIS	Sphericity Assumed	.371	4	.093	1.383	.262	.147	5.532	.380
Error(DrpOutRateYear)	Sphericity Assumed	2.145	32	.067					

a. Computed using alpha = .05

Table 73

The Dropout Rate Between-Subjects Effect Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	.650	1	.650	.551	.479	.064	.551	.101
Error	9.428	8	1.179					

a. Computed using alpha = .05

There was not a significant value obtained for the between-subjects effect for the Annual Dropout Rate PBIS implementation (p=0.479). In *Figure 14*, there is a display of the mean values for the Dropout Rate PBIS implementation across the Years.

Figure 14. The Dropout Rate Mean Values for PBIS Implementation across the Years

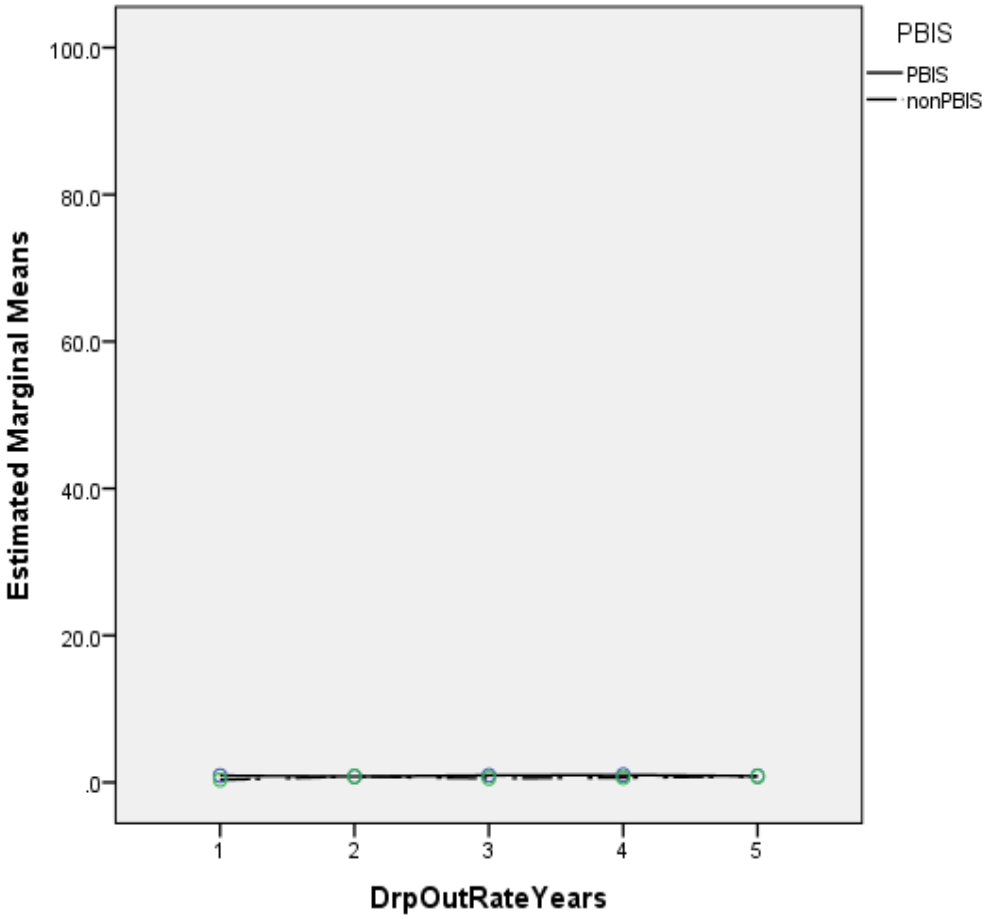

Figure 14. The mean values for (a) PBIS schools were 0.93%, 0.8%, 0.96%, 1.0% and 0.88%; and (b) non-PBIS schools were 0.35%, 0.8%, 0.55%, 0.65%, and 0.8%.

The Graduation Rate

According to TEA, the Graduation Rate was defined as the percentage of a cohort of students that completed school, obtained a GED, or did not drop out of school (TEA; 2007, 2008, 2009, 2010, 2011, 2012). Data were revealed from school years 2007 to 2011 with the exception of High Schools 7 & 8 which did not have a graduating class during the span of the study. An illustration of the Graduation Rates for High Schools 1-10, with the exception of HS 7 and HS 8, can be viewed in Figures 47 – 54 (Appendix K).

The value of the Graduation Rate of the *high* PBIS implementation high school, HS 2, increased from 94.4% to 95.7%. The Graduation Rate for the *moderate* PBIS implementation level high schools, HS 1, 3, 5 and 6 were as follows: (a) HS 1, the Graduation Rate decreased from 95.3% to 91%; (b) HS 3, the Graduation Rate increased from 97% to 97.8%; (c) HS 5, the Graduation Rate fluctuated from 97.4% to 96.7%; and (d) HS 6, the Graduation Rate increased from 95.3% to 96.8%.

For the *low* PBIS implementation level school, HS 4, the values of the Graduation Rate increased from 95.8% to 96.5%. For *none* PBIS implementation schools, HS 9 and 10, the Graduation Rates were as follows: (a) HS 9, the graduation rate fluctuated from 98.3% to 96.2% and (b) HS 10, the Graduation Rate were recorded for two years, 2010 and 2011, and increased from 99.1% to 99.4%.

The Graduation Rates for the Differing PBIS Implementation Levels and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Graduation Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.479). A two-factor factorial

mixed model analysis of the Level of PBIS Implementation and Years was conducted. In Table 74, there is a display of the within-subject effects.

In Table 74, with Sphericity assumed, there was not a significant interaction for Years and Levels of PBIS implementation (p=0.878). There was not a significant main effect for Years (p=0.880). In Table 75, there is a display of the Graduation Rate between-subjects test for the differing Levels of PBIS implementation.

In Table 75, there was no significant effect obtained for the between-subjects examination of the Graduation Rate at differing Levels of PBIS (p=0.573). In *Figure 15,* there is a display of means for the differing levels of PBIS implementation.

Table 74

The Graduation Rate Within-Subjects Effect Test for the Differing Levels of PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	1.529	4	.382	.291	.880	.068	1.162	.098
Years * Level	Sphericity Assumed	8.061	12	.672	.511	.878	.277	6.127	.183
Error(GradRateYear)	Sphericity Assumed	21.048	16	1.315					

a. Computed using alpha = .05

Table 75

The Graduation Rate Between-Subjects Effect Test for the Differing Levels of PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Level	30.436	3	10.145	.759	.573	.363	2.276	.116
Error	53.492	4	13.373					

a. Computed using alpha = .05

Figure 15. The Graduation Rate Mean Values for the Differing Levels of PBIS Implementation across the Years

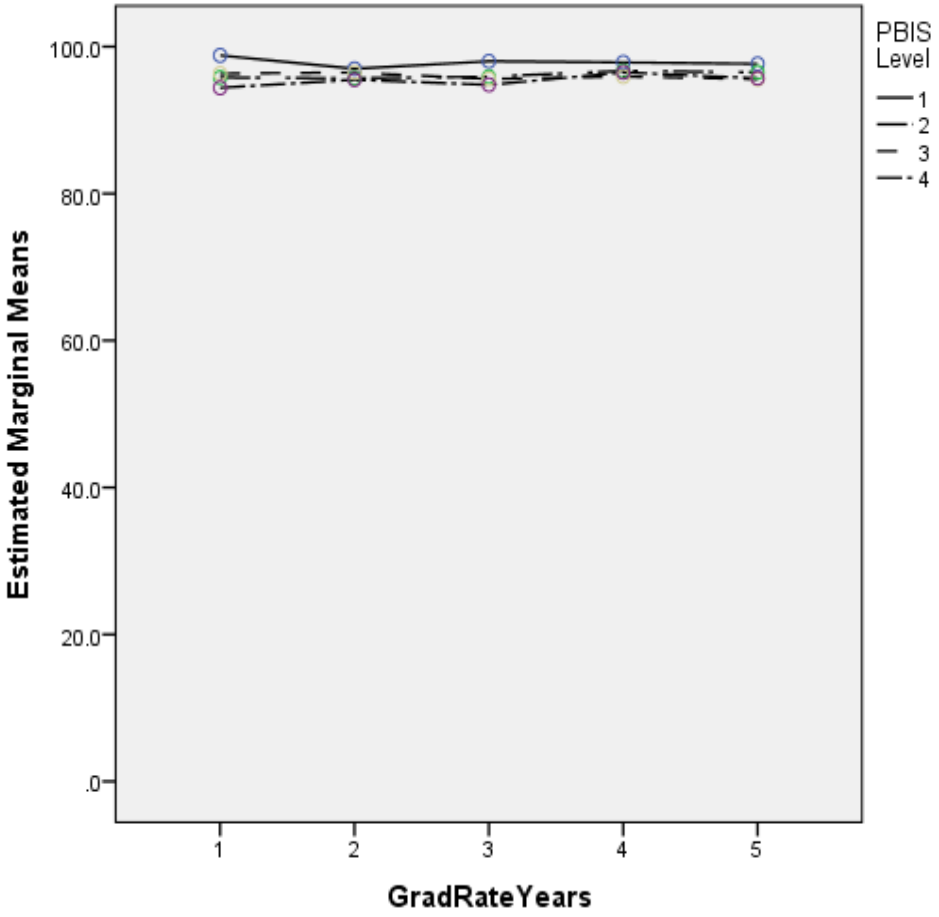

Figure 15. The mean values for the differing Levels of PBIS implementation were as follows: (a) *high*, 94.4%, 95.5%, 94.8%, 96.5%, and 95.7%; (b) *moderate*, 96.3%, 96.5%, 95.6%, 95.9%, and 95.6%; (c) *low*, 95.8%, 95.7%, 95.9%, 96.7%, and 96.5%; and (d) *none*, 98.8%, 97%, 98%, 97.9%, and 97.7%.

The Graduation Rates for PBIS Implementation and Years

Mauchly's Test of Sphericity was conducted to test the null hypothesis of whether the covariance matrix of the orthonormalized Graduation Rate data was proportional to an identity matrix. The assumption of sphericity was met (p=0.479). A two-factor factorial mixed model analysis of PBIS Implementation and Years was conducted. In Table 76, there is a display of the within-subject effects.

In Table 76, with Sphericity assumed, there was no significant interaction for Years and PBIS implementation (p=0.485). There was no significant main effect for Years (p=0.715). In Table 77, there is a display of the between-subjects effect test.

In Table 77, there was no significant value obtained for the between-subjects effect test (p=0.128). In *Figure 16,* there is a display of the Graduation Rate mean values for the PBIS implementation across the Years.

Table 76

The Graduate Rate Within-Subjects Effect Test for PBIS Implementation and Years

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Years	Sphericity Assumed	2.241	4	.560	.530	.715	.081	2.122	.155
Years * PBIS	Sphericity Assumed	3.757	4	.939	.889	.485	.129	3.557	.240
Error(GradRateYear)	Sphericity Assumed	25.351	24	1.056					

a. Computed using alpha = .05

Table 77

The Graduation Rate Between-Subjects Effect Test for PBIS Implementation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
PBIS	28.714	1	28.714	3.120	.128	.342	3.120	.319
Error	55.214	6	9.202					

a. Computed using alpha = .05

Figure 16. The Graduation Rate Mean Values for PBIS Implementation across the Years

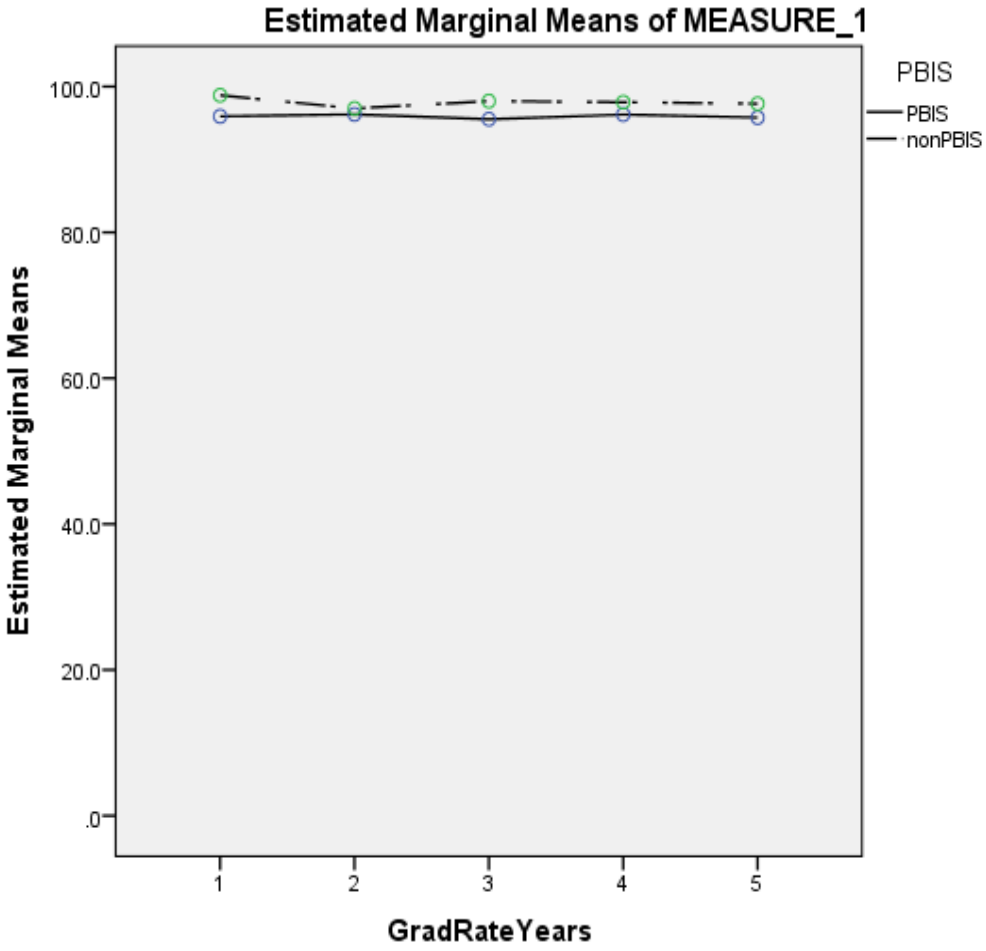

Figure 16. The mean values were as follows: (a) PBIS schools, 95.9%, 96.2%, 95.5%, 96.1%, and 95.8% and (b) non-PBIS schools, 98.8%, 97%, 98%, 97.9%, and 97.7%.

Summary of the Results

In conclusion, in this chapter I presented the research findings and results. I began with a description of the student population at the state, district and school levels. I gave the total student population, the ethnic subpopulations and some of the student learner attributes

subpopulations. At the state, district, and school level there was an increase in student population over the span of the study. There was variation at the school level of the ethnic subpopulations and student learner attribute subpopulations.

The findings from the Initial Research Task 1 yielded to the classification of the High Schools into the PBIS implementation levels of *high, moderate, low* and *none* in the Initial Research Task 2. HS 2 had a *high* level of PBIS implementation. High Schools 1, 3, 5, 6, 7 and 8 had a *moderate* level of PBIS implementation. HS 4 had a *low* level of PBIS implementation. HS 9 and HS 10 had *none* level PBIS implementation.

I addressed each research question with the two-factor factorial mixed model ANOVA. The results were presented in the form of tables and figures. The first research question was formulated to look at differences between the differing Levels of PBIS Implementation and Years. An interaction was found for the Dropout Rate. The SMEs did not reveal any significant values for the Dropout Rate and Years. There was no significant interaction found between Years and differing Levels of PBIS Implementation for the Discipline Infraction Rate, Math TAKS Pass Rate, Reading TAKS pass rate, Attendance Rate, or Graduation Rate found. However, there was a significant main effect found for the Discipline Infraction Rate, Math TAKS Pass Rate, and Attendance Rate across the Years of the study.

The second research question was used to look at the differences between PBIS implementation and Years. No significant interaction was found for any of the outcome variables. A simple main effect was found for the Discipline Infraction Rate, Math TAKS Pass Rate, and Attendance Rate across the Years of the study. In the next chapter, I will discuss the results and implications.

CHAPTER V

CONCLUSIONS

Educators at the high school level have a responsibility to prepare students for academic and social success while in school, as well as life after school. The primary focus of my study was to analyze the differences in the aggregated student performance of high school students in schools with varying levels of PBIS implementation. The outcome variables examined were the: (a) discipline infraction rate, (b) math and reading TAKS pass rates, (c) attendance rate, (d) dropout rate, and (e) graduation rate. My study involved 10 high schools within one Texas school district. My primary goal was to determine if PBIS implementation provided the necessary support needed for schools to improve student performance outcomes and improve graduation rates. The descriptive and statistical findings of my study may have implications in the development and extension of current PBIS practices at the high school level. The generalizability of my results is somewhat limited; however, the results contribute to the literature through evidence of no impact for the level of PBIS implementation on student performance outcomes at the high school level.

Interpretation and Summary of the Population Trends

At the state level, evidence existed to suggest an overall increase in the number of students enrolled in Texas public schools over the span of the study; however, the percentage of students in grades 9 through 12 decreased over the same span. Changes in student ethnicity populations at the state level revealed an increase in the number of Hispanic, Native American and Asian students and a decrease in the number of African American and White students. In addition, the learner diversity sub-populations for students identified as

economically disadvantaged or limited English proficiency increased. Finally, students enrolled in special education decreased. These results support Darling-Hammond's conclusion regarding the changing culture within the American public education system (Darling-Hammond, 2000, 2004).

At the district level, the population of students in grades 9 through 12 increased, as did the total population of the district, over the time span of the study. Changes in student ethnicity populations varied. Differing from the state, the district experienced a decrease in students identified as White, Native American or Asian but an increase in students identified as African American or Hispanic. Similar to the state, the district experienced an increase in the percentage of students identified as economically disadvantaged and limited English proficiency and a decrease in the percentage of students identified as special education. These results also support Darling-Hammond's conclusion that the culture within the American public education system was currently experiencing a change (Darling-Hammond, 2000, 2004). Although the district was classified as a suburban district, it exhibited many character traits of an urban district. By the end of the study, the total student population was over 100,000 students and had 46.5% economically disadvantaged students (TEA, 2011).

At the school level, there was a great deal of variability between the schools during the span of the study (2007-2011). The mean population was 3008.37, yet the range between schools was 836 to 3991. The mean African American population was 16.2%, yet the range between schools was 6.5% to 33.2%. The mean Hispanic population was 33.5%, yet the range between schools was 12.6% to 53.6%. The mean White population was 40.9%, yet the range between schools was 12.4% to 76.8%. The mean Native American population was 0.26%, yet the range between schools was 0% to 0.5%. The mean Asian/Island Pacific

population was 8.53%, yet the range between schools was 3.8% to 13.1%. The mean economically disadvantaged population was 31.6%, yet the range between schools was 7.6% to 63.1%. The mean limited English proficiency population was 4.7%, yet the range between schools was 1.2% to 8.7%. The mean special education population was 7.5%, yet the range between schools was 4.2% to 9.8%. The differences between schools were evident. Some schools had small levels of diversity, yet some schools dealt with a large culturally and linguistically diverse population. I noted that a general trend of schools within the district which did not implement PBIS were not as culturally and linguistically diverse as the schools that did implement PBIS.

Interpretation and Summary for the Level of PBIS Implementation

My research of policy implementation alluded to the belief that the greater the level of implementation of a policy the more effective the outcome (Cohen, Moffit & Goldin, 2007). The level of PBIS implementation in high schools was evaluated through two perspectives: principals in the Principal PBIS Implementation Survey (Appendix B) and staff members in the EBS survey (Appendix B). The Principal PBIS Implementation Survey yielded values for (a) duration of PBIS practice; (b) composition of the PBIS leadership team; (c) composition of the PBIS motto and matrix development team; (d) initial PBIS training; and (e) ongoing PBIS training and support for staff and students. The EBS survey yielded values for the perception from the staff members regarding effectiveness of the "in place" PBIS practices.

Based on the results in Chapter IV, the following discussion was related to the level of PBIS implementation:

1. PBIS was implemented in a tiered format in the district; therefore, the time frame for implementation ranged from two to five years.
2. The ongoing training and support varied from once to multiple times a year in which PBIS was integrated into the majority of trainings and activities.
3. The staff perception of in place practices on the EBS survey revealed variation between schools.
4. The High Schools were classified as follows: HS 4 was a *high* level of implementation, HS 1, 3, 4, 5, 7, and 8 were a *moderate* level of implementation, HS 4 was a *low* level of implementation and HS 9 and 10 were a *none* level of PBIS implementation because PBIS was not implemented. This was a summation of the evaluation for the PBIS practices at each school.

Interpretation and Summary for the Student Performance Outcomes

PBIS was a school-wide program designed to improve student performance be creating a positive school culture (Sugai & Horner, 2002a). Many PBIS researchers highlighted student performance outcomes, such as discipline infractions and academic performance (Bohanon et al, 2009; Horner et al, 2005; McIntosh et al. 2008, 2009). My study included behavior and academics and highlighted results for attendance, dropout, and graduation rates. I looked at student performance form two perspectives, the level of PBIS implementation and PBIS implementation versus non-PBIS implementation. A two factor factorial mixed model ANOVA was performed for each of the perspectives on the aggregated student performance outcome variables across the years of the study.

Based on the results in Chapter IV, the following discussion was related to the student performance outcomes:

1. For the discipline infraction rate there was not a significant interaction for the level of PBIS Implementation and Years or PBIS Implementation and Years yet there was a large effect size. However, there was a significant main effect for Years for both perspectives. This would suggest that PBIS Level of Implementation did not impact the change in the discipline infraction rate across the Years.
2. For the Math TAKS Pass Rate there was not a significant interaction between the level of PBIS Implementation and Years or PBIS implementation and Years, yet there was a large effect size. However, there was significant main effect for Years of the study for both perspectives. This would suggest that PBIS implementation did not impact the changes in the Math TAKS Pass Rate for Years.
3. For the Reading TAKS Pass Rate there was not a significant interaction for Level of PBIS implementation and Years or PBIS implementation and Years. Also, there was no significant main effect for Years. This would suggest that there were no differences in the schools across Years.
4. For the Attendance Rate there was not a significant interaction for Level of PBIS implementation and Years or PBIS implementation and Years. There was no significant main effect for the level of PBIS implementation. However, there was a significant main effect across the years of the study for Level of PBIS implementation as well as PBIS implementation. This was would suggest that PBIS implementation did not impact the changes in the Attendance Rate for Years.
5. For the Dropout Rate there was a significant interaction between Level of PBIS implementation and Years. There was not a significant interaction between PBIS implementation and Years. There was not a significant main effect for Years from either

perspective. This would suggest that difference in the Dropout Rate was a function of the Level of PBIS implementation and Years.

6. For the Graduation Rate there was not a significant interaction for Level of PBIS implementation and Years or PBIS implementation and Years. Also, there was no significant main effect across the years of the study. This would suggest that there were no differences in the schools across Years.

One of the more interesting results from my study was related to discipline. Specifically, schools with high levels of PBIS implementation had the highest discipline rates in comparison to schools with lower levels of PBIS implementation. Although there was a decrease in the amount of discipline for all schools over the span of the study, this result could not be based upon the level of PBIS implementation. This contradicts the conclusion of Sugai and Horner, designers of PBIS, who found that the implementation of PBIS decreased the number of discipline incidents (Sugai and Horner, 2000, 2002a, 2002b, 2006, & 2009). I found that discipline incidents decreased regardless of whether or not the school implemented PBIS. There was no significant difference in student performance of the discipline infraction rate between PBIS and non-PBIS schools.

On the other hand, results from my analysis for other issues were as expected. For example, similar to the results of Guest (2013) there was an overall increase in students' graduation rate in PBIS schools. In addition, there was also an increase in students' academic performance and attendance rates. Guest also reported a decrease in students' dropout rate when schools implemented PBIS (Guest, 2013). Schools in my study reported a decrease in students' dropout rate over the span of the study, consistent with Guest's findings. Overall,

findings from my study were consistent with the majority of findings found in the PBIS literature (Gottfredson et al, 1993, 2002; Horner et al. 2004, 2005; Lassen et al, 2006).

Implications for Future Research

The following implications were observed from the results of the study:

1. Further analyses should be conducted at the student level to examine if the level of PBIS implementation impacts dropout rate.
2. Further analyses should be conducted at the student level to examine how schools with diverse populations were able to perform without any significant difference.
3. Further analyses should be conducted at the student level to examine why there was no significant interaction between the level of PBIS implementation and years for the discipline infraction rate, math TAKS pass rate, reading TAKS pass rate, attendance rate and graduation rate.
4. Further analyses should be conducted at the student level to examine why there was no significant interaction between the PBIS implementation and years for the discipline infraction rate, math TAKS pass rate, reading TAKS pass rate, attendance rate, dropout rate and graduation rate.
5. Further analyses should be done to examine if, over a longer period of time, there is a significant main effect in the discipline infraction rate, math TAKS pass rate and attendance rate across the years.

Overall, after reviewing the findings of the study, I concluded that PBIS implementation does not contribute to the difference in the student performance except for the Dropout Rate. I would suggest to schools using PBIS to continue the practices in an effort to decrease the Dropout Rate at the high school level. The school district

researchers should examine more closely the PBIS practices of the school with a high level of PBIS implementation and determine how those practices impact student performance at the student level. They should also examine the practices of non-PBIS schools to determine the practices utilized to increase student performance. Ultimately, if there is a continued decrease in the dropout rate and a positive impact on the variables that lead to dropout, then PBIS may contribute to an increase in the graduation rate.

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APPENDIX A

THE PRINCIPAL PBIS IMPLEMENTATION SURVEY

Principal PBIS Implementation Survey

Name of School _____

1. **Select the years for which your school implemented PBIS.** ***(Check all that apply)***

   ☐ 2007 ☐ 2008 ☐ 2009 ☐ 2010 ☐ 2011

2. **Does your school have a PBIS leadership team?**

   ☐ Yes ☐ No

3. **Who is a member of the PBIS leadership team?** ***(Check all that apply)***

   ☐ Administrators ☐ Teachers ☐ Paraprofessionals

   ☐ Students ☐ Parents ☐ Custodial Staff

   ☐ Community Members

4. **Does your school have a PBIS motto in place?**

   ☐ Yes ☐ No

5. **Who participated in the development of the motto?** ***(Check all that apply)***

   ☐ Administrators ☐ Teachers ☐ Paraprofessionals

   ☐ Students ☐ Parents ☐ Custodial Staff

   ☐ Office Staff ☐ Cafeteria Staff ☐ Community Members

6. **Does your school have a PBIS matrix in place?**

   ☐ Yes ☐ No

7. **Who participated in the development of the PBIS matrix?** ***(Check all that apply.)***

   ☐ Administrators ☐ Teachers ☐ Paraprofessionals

   ☐ Students ☐ Parents ☐ Custodial Staff

   ☐ Office Staff ☐ Cafeteria Staff ☐ Community Members

8. **What type of formal training/introduction did staff members receive regarding initial training of PBIS ideas, concepts and practices?**

_____

9. **Did the staff receive training after the first year?**

☐ Yes ☐ No

10. **What type of ongoing PBIS training did your staff and/or students participate?**

11. **Was performance data, such as discipline rates and achievement rates, shared with staff members?**

☐ Yes ☐ No

The follow questions refer to the implementation practices of your campus. Reflecting over the time since your school implemented PBIS, how often does the faculty review the PBIS matrix and motto with students? *(If your school did not participate in PBIS during the school year listed, select N/A.)*

12. **Implementation Year (2006-2007)**

☐ N/A (PBIS was not in place) ☐ Once a week

☐ Once a grading period

☐ Once a semester ☐ Once a year

☐ No training took place ☐ Other (specify): _____

13. **Implementation Year (2007-2008)**

☐ N/A (PBIS was not in place) ☐ Once a week

☐ Once a grading period

☐ Once a semester ☐ Once a year

☐ No training took place ☐ Other (specify): _____

14. Implementation Year (2008-2009)

☐ N/A (PBIS was not in place) ☐ Once a week

☐ Once a grading period

☐ Once a semester ☐ Once a year

☐ No training took place ☐ Other (specify): _____

15. Implementation Year (2009-2010)

☐ N/A (PBIS was not in place) ☐ Once a week

☐ Once a grading period

☐ Once a semester ☐ Once a year

☐ No training took place ☐ Other (specify): _____

16. Implementation Year (2010-2011)

☐ N/A (PBIS was not in place) ☐ Once a week

☐ Once a grading period

☐ Once a semester ☐ Once a year

☐ No training took place ☐ Other (specify): _____

17. Did your staff participate administered the EBS survey from information services in…

…2007-2008?	…2008-2009?	…2009-2010?	…2010-2011?
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

APPENDIX B

EFFECTIVE BEHAVIOR SUPPORT (EBS) SURVEY

PBIS EBS Survey
School Name
Total # of surveys taken:

27 Questions		Current Status			
In Place		Partially in Place		Not in Place	
#	%	#	%	#	%
Host Environment					
1					A small number (3-5) of positively stated school-wide student expectations or rules are defined.
2					Expected student behaviors are taught directly.
3					Expected student behaviors are acknowledged regularly.
4					Procedures are in place to address emergency/dangerous situations.
Team/Management/Data					
1					A team exists for behavior support planning and problem solving.
2					School administrator is an active participant of the behavior support team.
3					Data on problem behavior patterns are collected and summarized within an ongoing system.
4					Patterns of student problem behavior are reported to teams and faculty for active decision-making on a regular basis (e.g. monthly).
5					Behavior is monitored and feedback provided regularly to the behavior support team and relevant staff.
6					School has formal strategies for informing families about expected student behaviors at school.
7					Booster training activities for students are developed, modified, and conducted based on school data.
8					All staff are involved directly or indirectly in school wide interventions.

Non-Classroom Settings/Active Supervision

1	School-wide expected student behaviors are taught and applied to non-classroom settings.
2	Adults actively supervise (move, scan, and interact) with students in non-classroom settings.
3	Transitions between instructional and non-instructional activities are efficient and orderly.
4	Acknowledgments exist for meeting expected student behaviors in non-classroom settings.
5	Staff receives regular opportunities for developing and improving active supervision skills.
6	All staff are involved directly or indirectly in management of non-classroom settings.

Classroom

1	Expected student behavior and routines in classroom are stated positively and defined clearly.
2	Expected student behaviors and routines in classroom are taught directly.
3	Expected student behaviors are acknowledged regularly. (Positive reinforcement: 5:1)
4	Procedures for expected and problem behaviors are consistent with school-wide procedures.
5	Students experience high rates of academic success (>80%)
6	Teachers have regular opportunities for access to assistance and recommendations (observations, instruction, and coaching.)
7	Distinctions between office v. classroom managed problem behaviors are clear.
8	A simple process exists for teachers to requests assistance.
9	Options exist to allow classroom instruction to continue when problem behavior occurs.

APPENDIX C

STUDERNT PERFORMANCE OUTCOME DATA COLLECTION INSTRUMENT

Student Performance Outcome Data Collection Instrument

School	School Year	Total Student Population	# of Discipline Incidents	TAKS Reading % Pass Rate ALL students	TAKS Math % Pass Rate All Students	Attendance Rate (%)	Annual Drop Out Rate (%)	Completion Rate I (Graduation Rate)	
HS1	2006-2007								
HS1	2007-2008								
HS1	2008-2009								
HS1	2009-2010								
HS1	2010-2011								
HS2	2006-2007								
HS2	2007-2008								
HS2	2008-2009								
HS2	2009-2010								
HS2	2010-2011								
HS3	2006-2007								
HS3	2007-2008								
HS3	2008-2009								
HS3	2009-2010								
HS3	2010-2011								
HS4	2006-2007								
HS4	2007-2008								
HS4	2008-2009								
HS4	2009-2010								
HS4	2010-2011								
HS5	2006-2007								
HS5	2007-2008								
HS5	2008-2009								
HS5	2009-2010								
HS5	2010-2011								
HS6	2006-2007								
HS6	2007-2008								
HS6	2008-2009								
HS6	2009-2010								
HS6	2010-2011								
HS7	2008-2009								
HS7	2009-2010								
HS7	2010-2011								
HS8	2008-2009								
HS8	2009-2010								
HS8	2010-2011								
HS9	2006-2007								
HS9	2007-2008								
HS9	2008-2009								
HS9	2009-2010								
HS9	2010-2011								
HS10	2006-2007								
HS10	2007-2008								
HS10	2008-2009								
HS10	2009-2010								
HS10	2010-2011								

APPENDIX D

LETTER TO PRINCIPAL

Dear Principal,

Hello, my name is Kimberly Rhodes-Monette and I am currently serving the district as an assistant principal. I am contacting you because I am in need of your assistance.

I am in the process of completing my Doctorate in Education Administration from Texas A& M University. I will analyze the differences between the implementation of Positive Behaviors Interventions Supports (PBIS) in the district at the high school level. I want to determine if the implementation of PBIS has a significant statistical impact on high school graduation rates and factors related to students who drop out of high school such as discipline assignments, attendance rates, and academic performance.

To accomplish my goal, I would like to schedule a meeting with you to discuss my research and hopefully acquire your signature. To gain approval in the district, I must submit a signed copy from each high school principal of the *Application for Conducting Research in the District (Internal Applicant).* Once approved, I will receive the number of student discipline assignments and the results of your staff PBIS perception surveys directly from the Information Services department. The other factors (listed above) that impact drop outs will be obtained from publicly available AEIS reports. I will cover the school years 2006-2007 to 2010-2011.

My second appeal will ask you to complete a survey to determine the level of implementation of PBIS on your campus. This portion can be completed once approval is obtained from the district and IRB.

Thank you for your time and attention. I look forward to the opportunity to meet with you soon. I have attached my Information Sheet, the district application and the PBIS survey for your preview.

Sincerely,

Kimberly Rhodes-Monette

APPENDIX E

TEXAS A&M INFORMATION SHEET

INFORMATION SHEET

AN ANALYSIS OF FOUR IMPLEMENTATION LEVELS FOR THE POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS (PBIS) ON SELECTED AGGREGATED HIGH SCHOOL STUDENT PERFORMANCE OUTCOMES

The purpose of this form is to provide you (prospective research study participant) information that may affect your decision whether or not to participate in this research.

Introduction

I am planning to conduct research to determine the impact of the implementation of Positive Behaviors Interventions Supports (PBIS) on High School graduation rates and factors impacting the dropout rate. I am requesting your participation in a research based study.

I will conduct a quantitative study to analyze the differences of the implementation of PBIS on the district at the High School level. I seek to determine if the implementation of PBIS has a significant statistical difference between High School graduation rates and circumstances relative to High School students who drop out such as discipline assignments, attendance rates and academic performance.

Initial Research Tasks

1 To determine the implementation level of PBIS at each high school based upon the following criteria:
   a. The duration of PBIS practice.
   b. The composition of PBIS leadership team.
   c. The composition of PBIS motto and matrix development team.
   d. The initial PBIS training.
   e. The ongoing PBIS training and support.
   f. The perception of the staff members regarding the effectiveness of the PBIS practices.

2 To categorize each high school into one of four PBIS implementation levels (*high, moderate, low, or none*).

Research Questions

1 Is there a difference in the aggregated student performance of high schools with differing levels of PBIS implementation on the following selected aggregated outcome variables:
   a. The discipline infraction rate?
   b. The math TAKS pass rate?
   c. The reading TAKS pass rate?
   d. The attendance rate?
   e. The dropout rate?
   f. The graduation rate?

2 Is there a difference in the aggregated student performance of PBIS high schools and non-PBIS high schools on the following selected outcome variables:

a. The discipline infraction rate?
b. The math TAKS pass rate?
c. The reading TAKS pass rate?
d. The attendance rate?
e. The dropout rate?
f. The graduation rate?

How can you support my research?
Upon agreement to participate in this study, you will be provided a questionnaire to provide feedback regarding the implementation practices of PBIS on your campus. The survey will take approximately 20 minutes. You will also allow access to student discipline data and the results of the faculty questionnaire conducted by the staff members reflecting their perceptions of the implementation practices of PBIS on your campus.

What are the risks involved in this study?
The risks associated with this study are minimal and are not greater than risks ordinarily encountered in daily life. Although the researchers have tried to avoid risks, you may feel that some questions/procedures that are asked of you will be stressful or upsetting. You do not have to answer anything you do not want to.

What are the possible benefits of this study?
You will receive no direct benefit from participating in this study; however, the results of this study could potentially assist educational leaders in modifying implementation practices of the PBIS system.

Do I have to participate?
Your participation is voluntary; you may decide not to participate or to withdraw at any time without being affected. You may decide to not begin or to stop participating at any time. If you choose not to be in this study or stop being in the study, there will be no effect on your employment in the school district of study.

Who will know about my participation in this research study?
The information about you will be kept confidential to the extent permitted and/or required by law. Records of this study will be kept in a locked safe; accessible to me exclusively. Participants will be assigned a number; no identifiers will link you to this study or be included in any sort of report that might be published.

Whom do I contact with questions about the research?
If you have questions regarding this study, you may contact:

Kimberly L. Rhodes-Monette

Whom do I contact about my rights as a research participant?
This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related questions or concerns regarding your rights as a research participant, you may contact these offices at (979)458-4067 or irb@tamu.edu.

Participation
Please be sure you have read the above information in its entirety; feel free to submit inquiries and receive a response to your satisfaction. Your response to the email or call (xxx) xxx-xxxx; will confirm or decline your participation in my research study.

APPENDIX F

A DESCIPTION OF THE EFFECTIVE BEHAVIOR SUPPORT (EBS)

SURVEY RESULTS

TABLE 78

Table 78

EBS Survey Results

School	Year	HE[a]		TMD[b]		NC[c]		CL[d]		Total
HS 1	2007-08	H	4	M	3	L	2	L	2	11
HS 1	2008-09	M	3	L	2	L	2	L	2	9
HS 1	2009-10	H	4	M	3	M	3	M	3	13
HS 1	2010-11	H	4	M	3	M	3	M	3	13
HS 2	2007-08	H	4	M	3	M	3	M	3	13
HS 2	2008-09	H	4	H	4	H	4	H	4	16
HS 2	2009-10	H	4	H	4	H	4	H	4	16
HS 2	2010-11	H	4	H	4	H	4	H	4	16
HS 3	2007-08	M	3	L	2	M	3	M	3	11
HS 3	2008-09	H	4	L	2	M	3	M	3	12
HS 3	2009-10	H	4	M	3	M	3	H	4	14
HS 3	2010-11	M	3	L	2	L	2	M	3	10
HS 4	2007-08	H	4	L	2	M	3	M	3	12
HS 4	2008-09	M	3	L	2	M	3	M	3	11
HS 5	2007-08	L	2	L	2	L	2	L	2	8
HS 5	2008-09	M	3	L	2	M	3	M	3	11
HS 5	2009-10	H	4	M	3	L	2	M	3	12
HS 5	2010-11	M	3	L	2	M	3	M	3	11
HS 6	2007-08	L	2	L	2	L	2	L	2	8
HS 6	2008-09	H	4	L	2	M	3	M	3	12
HS 6	2009-10	H	4	H	4	H	4	H	4	16
HS 6	2010-11	H	4	H	4	H	4	H	4	16

School	Year	HE[a]		TMD[b]		NC[c]		CL[d]		Total
HS 7	2008-09	H	4	M	3	M	3	H	4	14
HS 7	2009-10	H	4	H	4	H	4	H	4	16
HS 7	2010-11	H	4	H	4	M	3	H	4	16
HS 8	2008-09	H	4	M	3	H	4	H	4	15
HS 8	2009-10	H	4	H	4	H	4	H	4	16
HS 8	2010-11	H	4	H	4	H	4	H	4	16

[a] HE represents the Host Environment
[b] TMD represents the Team Management of Data
[c] NC represents the Non-Classroom Settings/Active Supervision
[d] CL represents the Classroom Environment

APPENDIX G

A DESCRIPTION OF THE TRANSFORMATION OF THE

DISCIPLINE INFRACTION RATE

TABLES 79 – 88

Table 79

Transformation of the Discipline Infractions for HS 1

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3930	6933	176.4
2007-2008	3904	5892	150.9
2008-2009	3074	3462	112.6
2009-2010	2879	3426	119.0
2010-2011	2488	3368	135.4

Table 80

Transformation of the Discipline Infractions for HS 2

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3109	5275	169.7
2007-2008	2992	4746	158.6
2008-2009	3033	3902	128.7
2009-2010	2962	3928	132.6
2010-2011	3000	3499	116.6

Table 81

Transformation of the Discipline Infractions for HS 3

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3331	3188	95.7
2007-2008	3271	2716	83.0
2008-2009	3071	2247	73.1
2009-2010	3191	2174	68.1
2010-2011	3310	2390	72.2

Table 82

Transformation of the Discipline Infractions for HS 4

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3451	2976	86.2
2007-2008	3569	4153	116.3
2008-2009	3208	3084	96.1
2009-2010	3126	3191	102.1
2010-2011	2908	3108	106.9

Table 83

Transformation of the Discipline Infractions for HS 5

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3044	2976	97.8
2007-2008	3127	2727	87.2
2008-2009	3183	3387	106.4
2009-2010	3283	3560	108.4
2010-2011	3297	2712	82.3

Table 84

Transformation of the Discipline Infractions for HS 6

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3417	3644	106.6
2007-2008	3473	4021	115.8
2008-2009	3287	2625	79.9
2009-2010	3347	3459	103.3
2010-2011	3358	3054	90.9

Table 85

Transformation of the Discipline Infractions for HS 7

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	-	-	-
2007-2008	-	-	-
2008-2009	1535	2635	171.7
2009-2010	2389	3960	165.8
2010-2011	3208	4762	148.4

Table 86

Transformation of the Discipline Infractions for HS 8

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007			
2007-2008			
2008-2009	836	488	58.4
2009-2010	1498	1002	66.9
2010-2011	2292	1692	74.8

Table 87

Transformation of the Discipline Infractions for HS 9

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	3172	3744	118.0
2007-2008	3118	3740	119.9
2008-2009	2984	2621	88.5
2009-2010	2953	2773	93.9
2010-2011	3149	2582	82.0

Table 88

Transformation of the Discipline Infractions for HS 10

Year	Total Student Enrollment	Number of Discipline Infractions	Discipline Infraction Rate (%)
2006-2007	2114	1876	88.7
2007-2008	3201	2956	92.3
2008-2009	3479	1892	54.4
2009-2010	3153	1850	58.7
2010-2011	2681	1617	60.3

APPENDIX H

A DECRIPTION OF THE MATH AND READING TAKS PASS RATE

FIGURES 17 - 26

Figure 17. The Math & Reading TAKS Pass Rates for HS 1

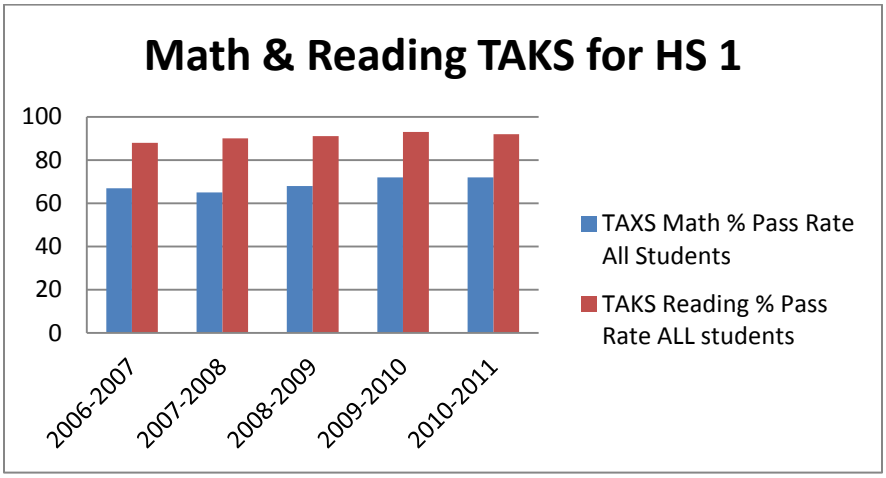


Figure 18. The Math & Reading TAKS Pass Rates for HS 2

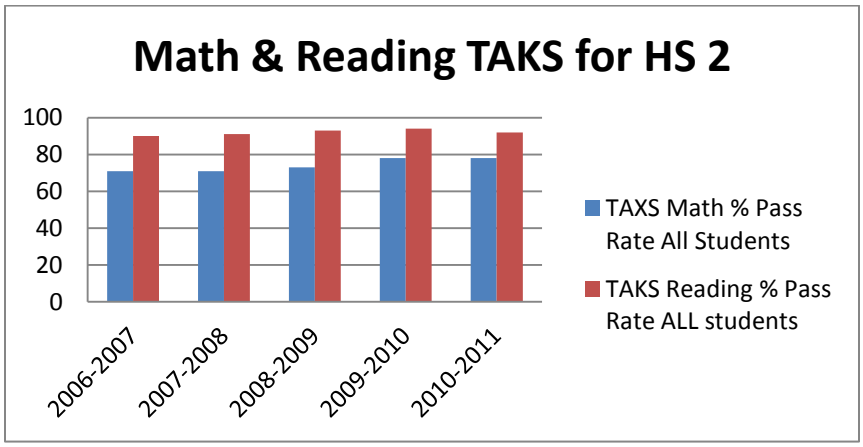


Figure 19. The Math & Reading TAKS Pass Rates for HS 3

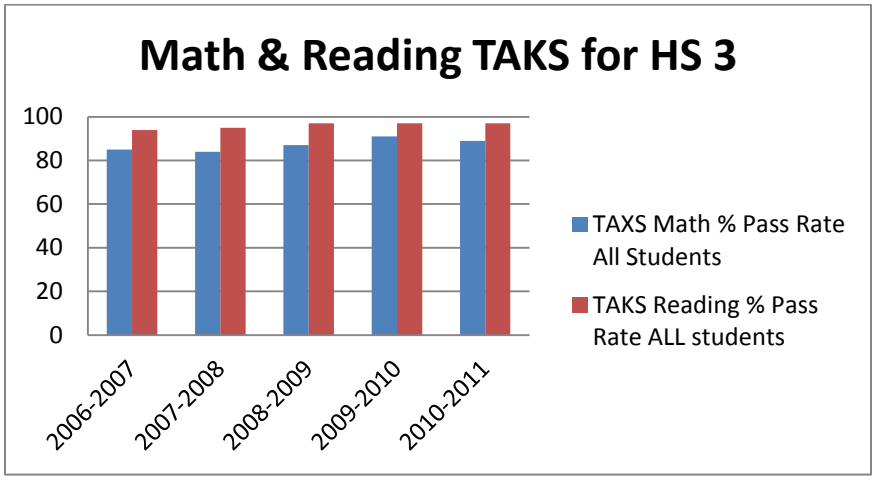


Figure 20. The Math & Reading TAKS Pass Rates for HS 4

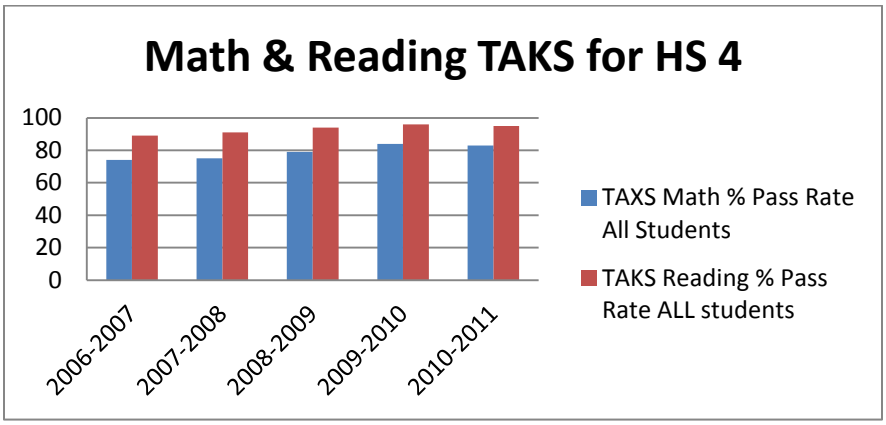


Figure 21. The Math & Reading TAKS Pass Rates for HS 5

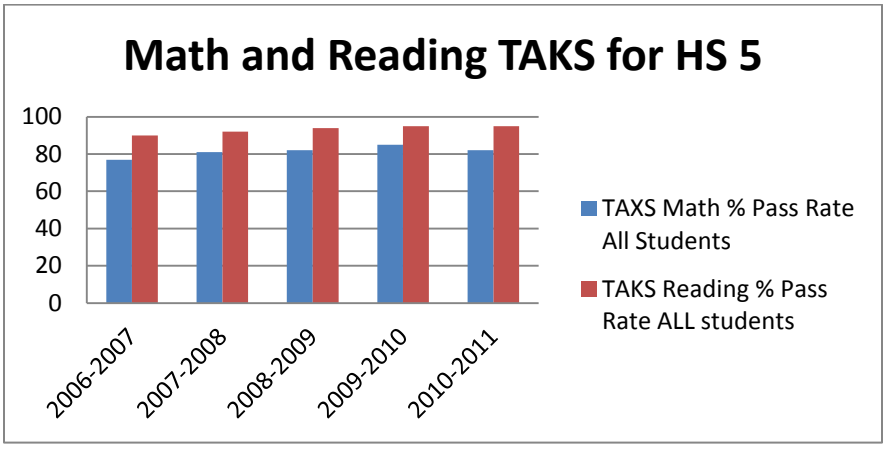


Figure 22. The Math & Reading TAKS Pass Rates for HS 6

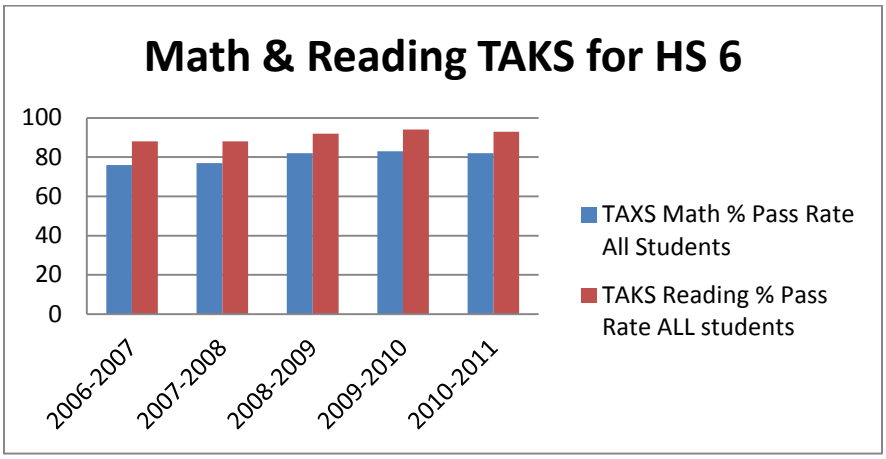


Figure 23. The Math & Reading TAKS Pass Rates for HS 7

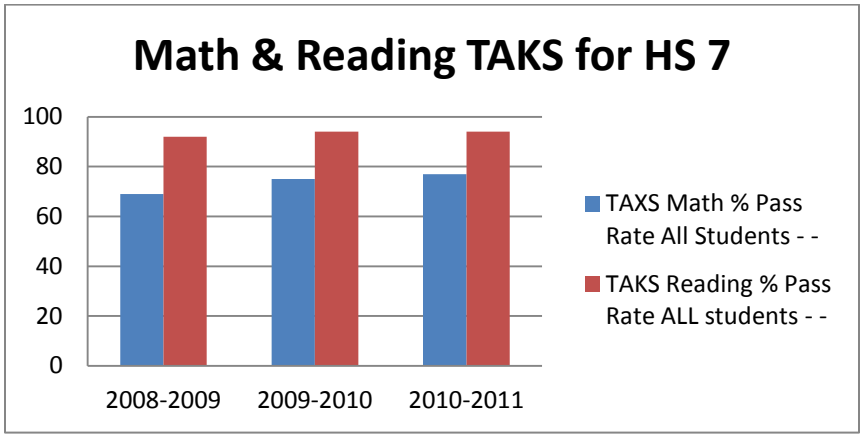


Figure 24. The Math & Reading TAKS Pass Rates for HS 8

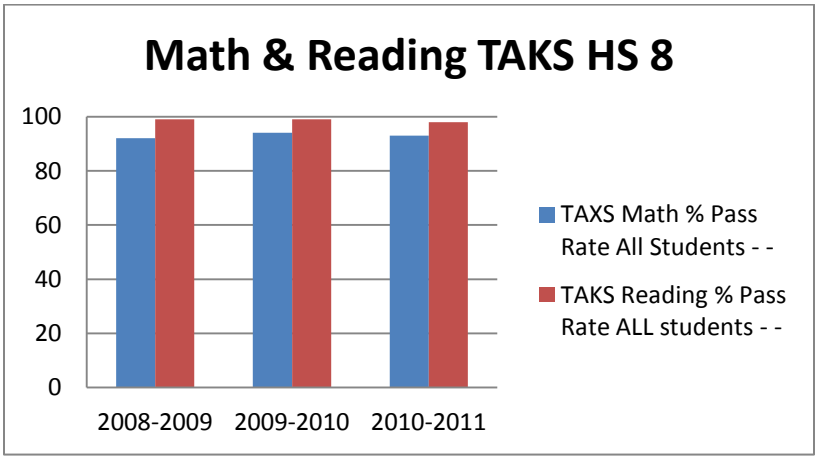


Figure 25. The Math & Reading TAKS Pass Rates for HS 9

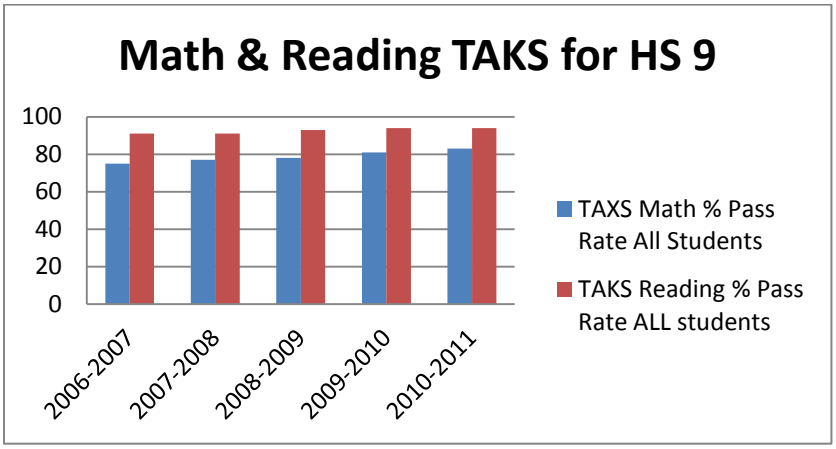
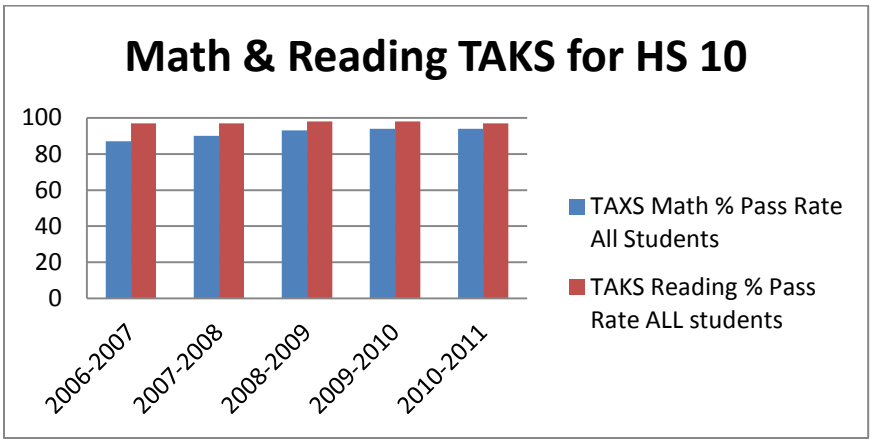


Figure 26. The Math & Reading TAKS Pass Rates for HS 10



APPENDIX I

A DESCRIPTION OF THE ATTENDANCE RATES OF HIGH SCHOOLS

FIGURES 27 – 36

Figure 27. The Attendance Rate for HS 1

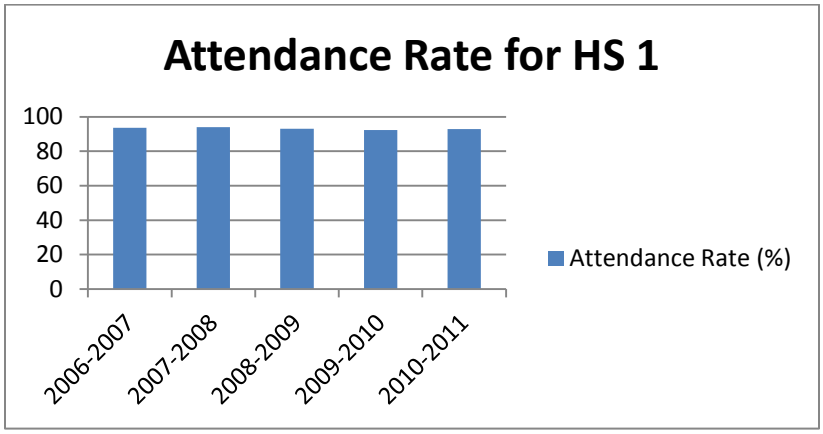


Figure 28. The Attendance Rate for HS 2

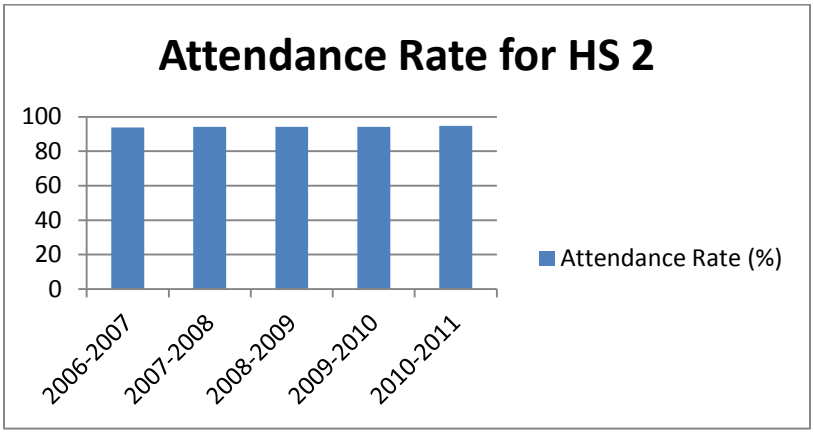


Figure 29. The Attendance Rate for HS 3

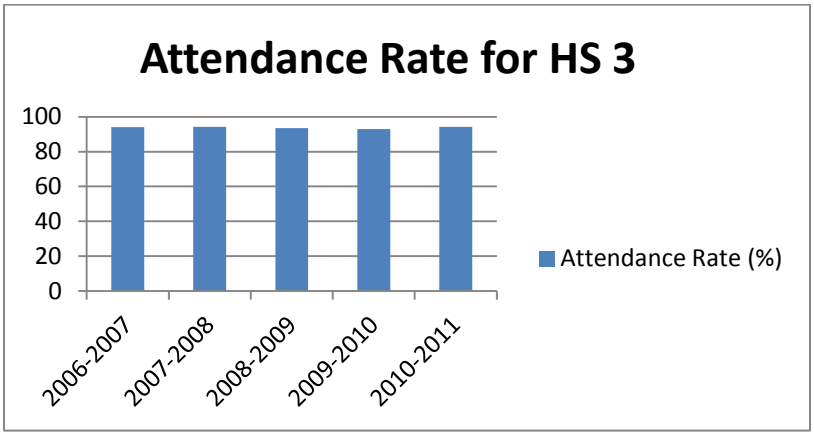


Figure 30. The Attendance Rate for HS 4

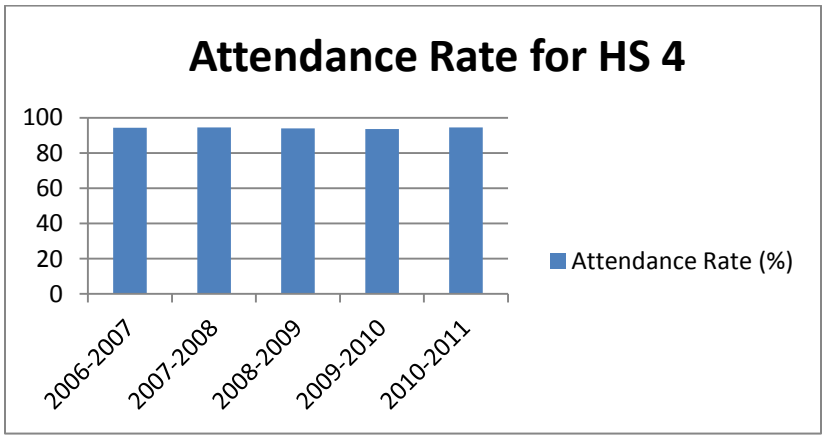


Figure 31. The Attendance Rate for HS 5

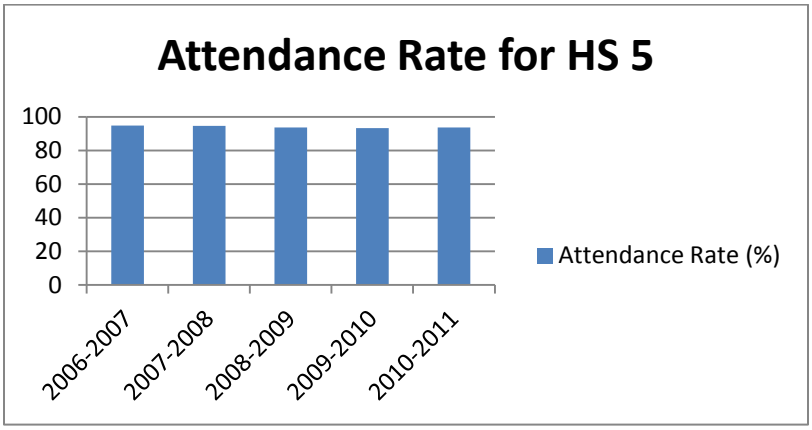


Figure 32. The Attendance Rate for HS 6

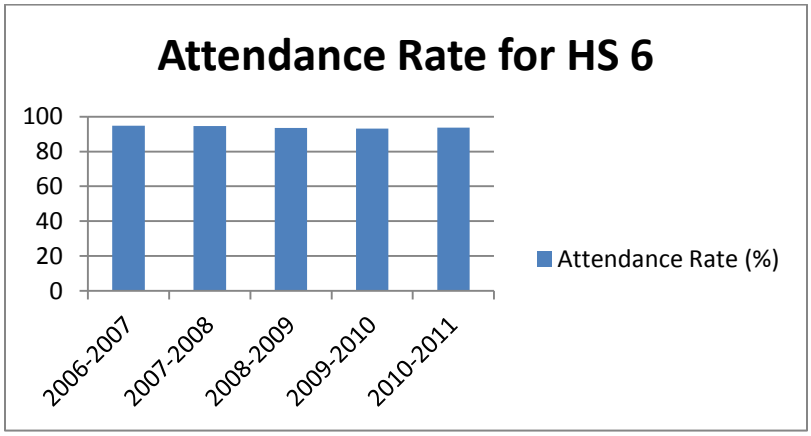


Figure 33. The Attendance Rate for HS 7

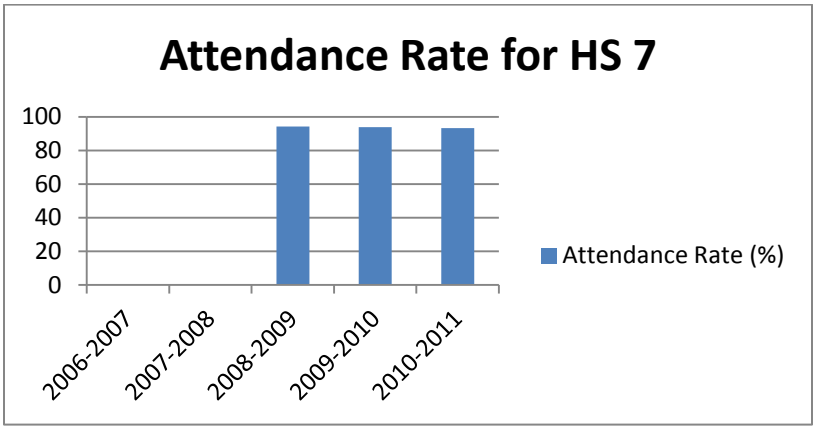


Figure 34. The Attendance Rate for HS 8

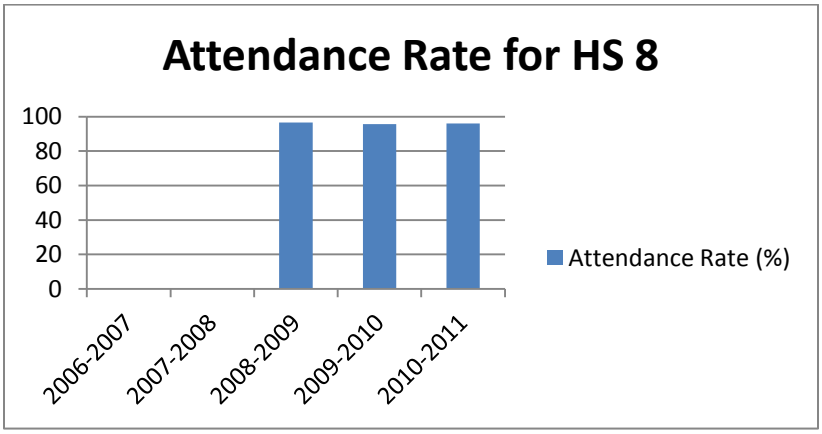


Figure 35. The Attendance Rate for HS 9

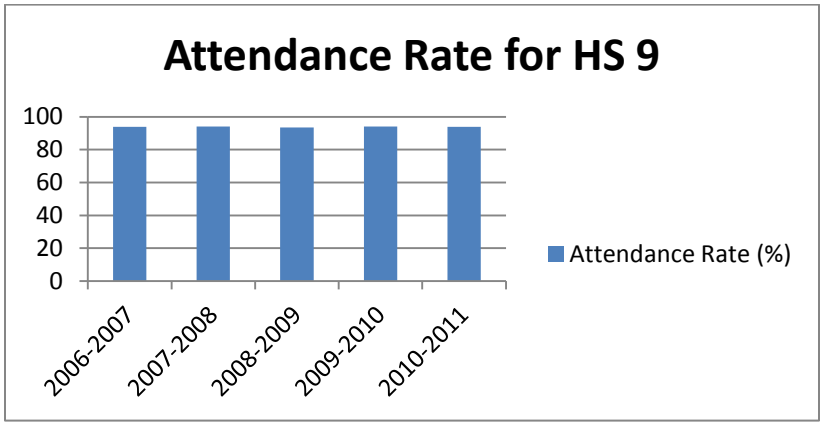
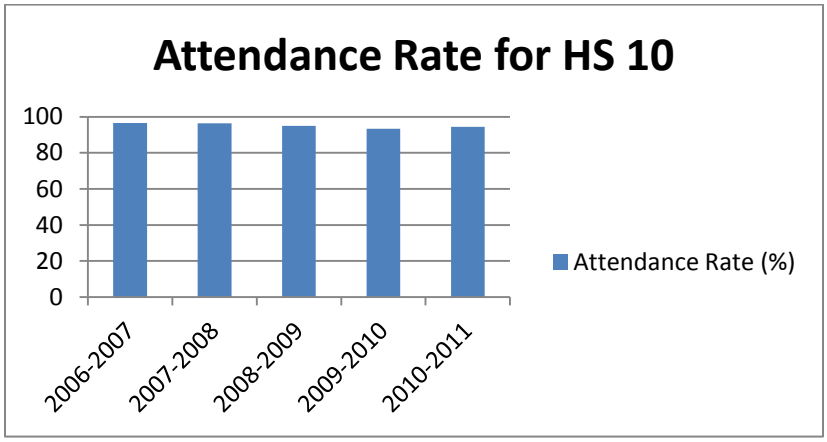


Figure 36. The Attendance Rate for HS 10



APPENDIX J

A DESCRIPTION OF THE DROPOUT RATES FOR HIGH SCHOOLS 1-10

FIGURES 37 – 46

Figure 37. The Dropout Rate for HS 1

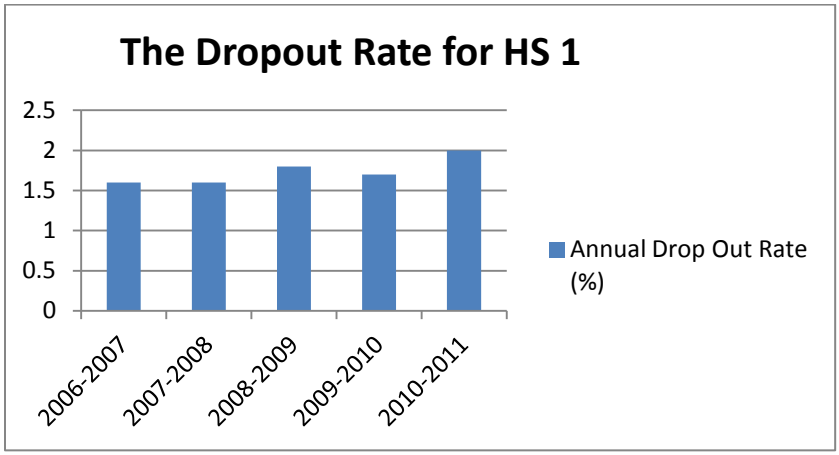


Figure 38. The Dropout Rate for HS 2

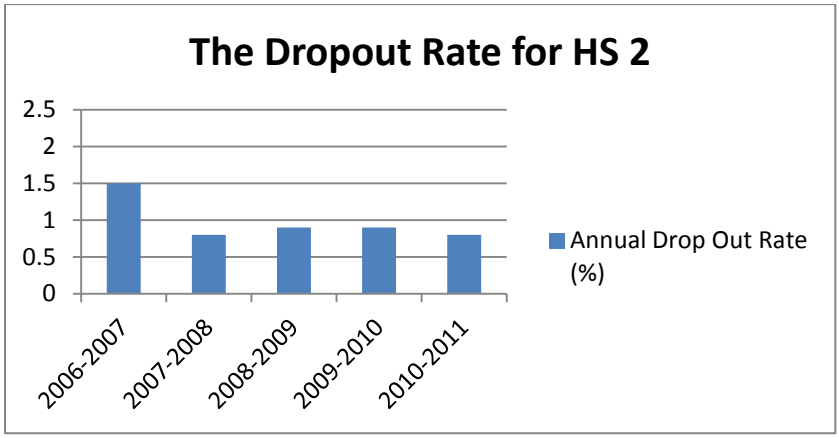


Figure 39. The Dropout Rate for HS 3

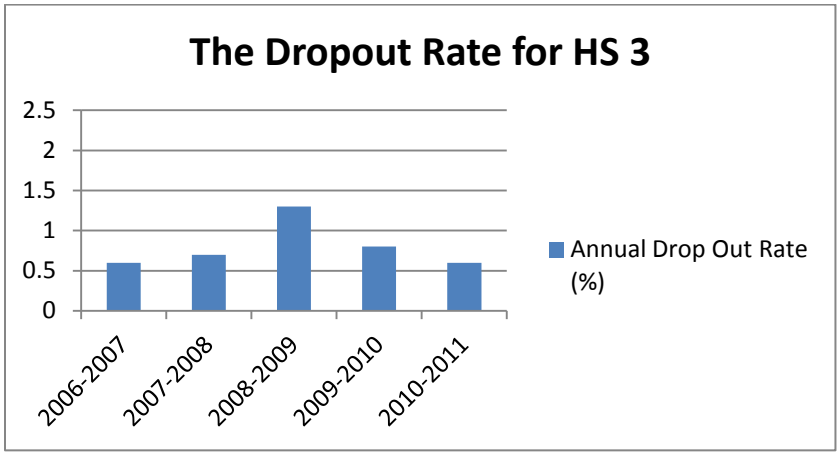


Figure 40. The Dropout Rate for HS 4

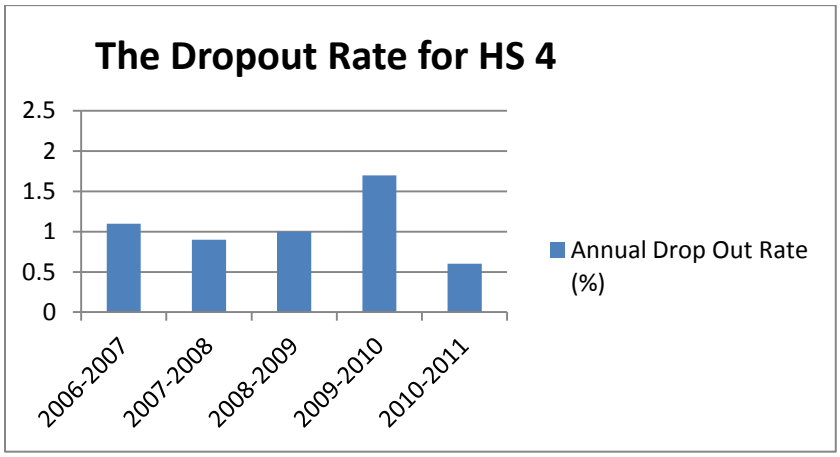


Figure 41. The Dropout Rate for HS 5

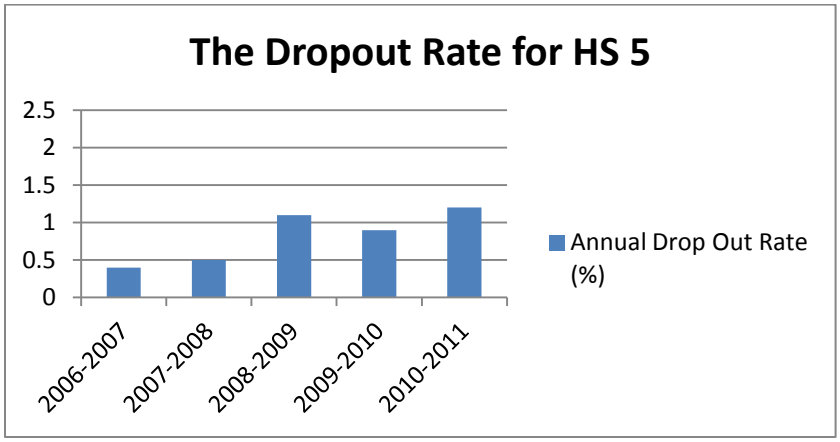


Figure 42. The Dropout Rate for HS 6

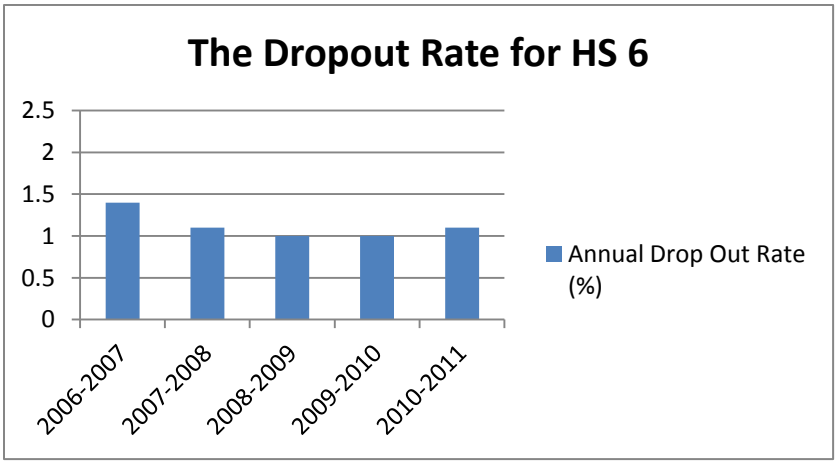


Figure 43. The Dropout Rate for HS 7

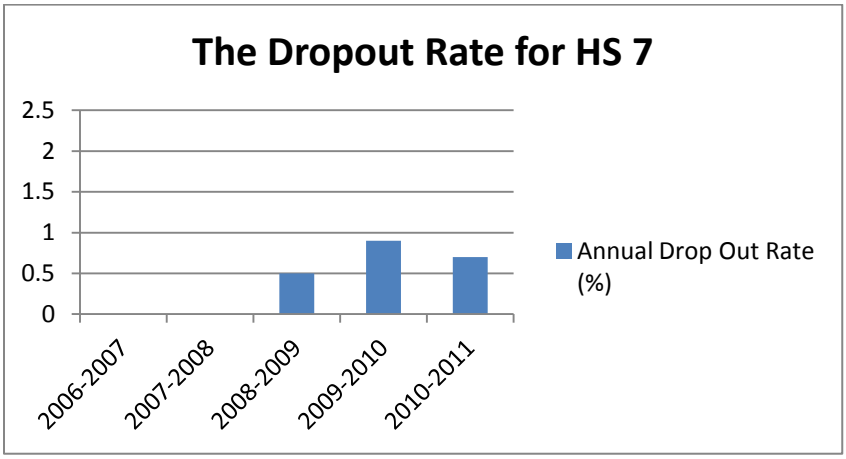


Figure 44. The Dropout Rate for HS 8

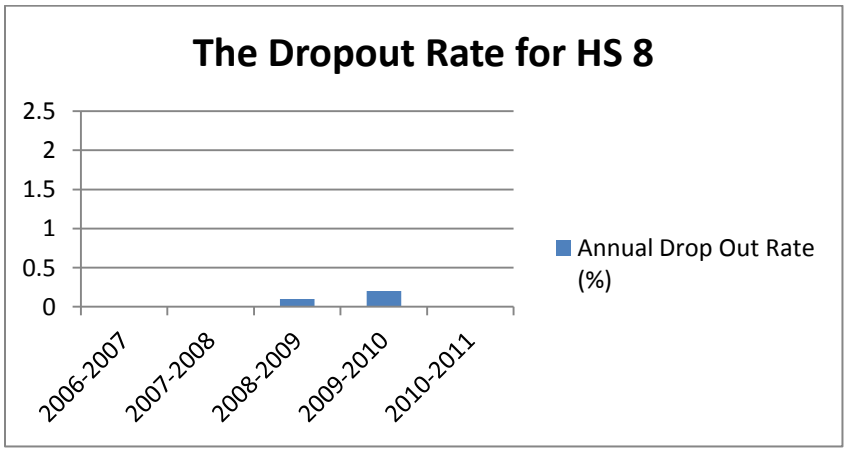


Figure 45. The Dropout Rate for HS 9

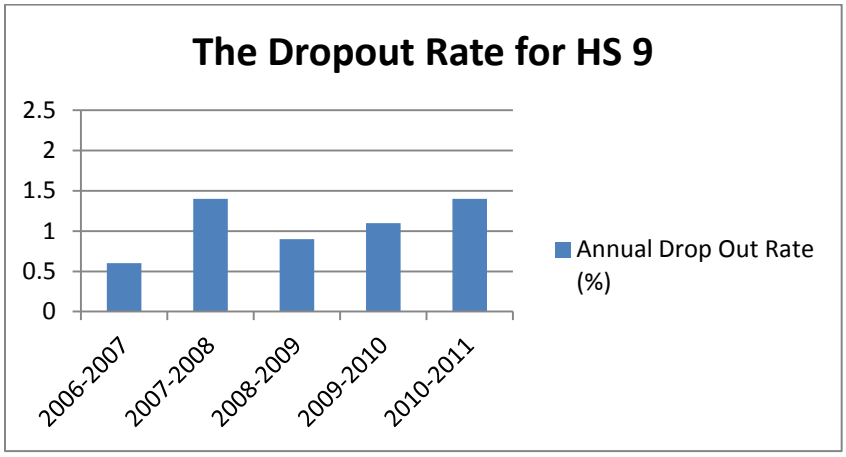
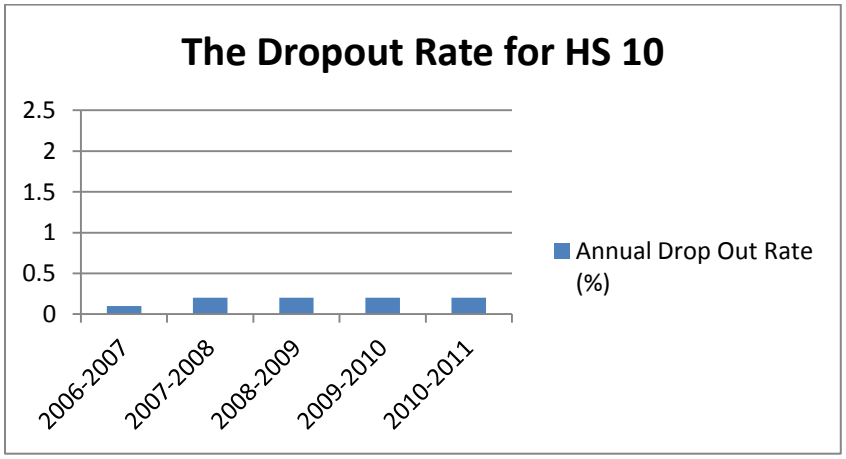


Figure 46. The Dropout Rate for HS 10



APPENDIX K

A DESCRIPTION OF THE GRADUATION RATES FOR HIGH SCHOOLS 1-10

FIGURES 47-54

Figure 47. The Graduation Rate for HS 1

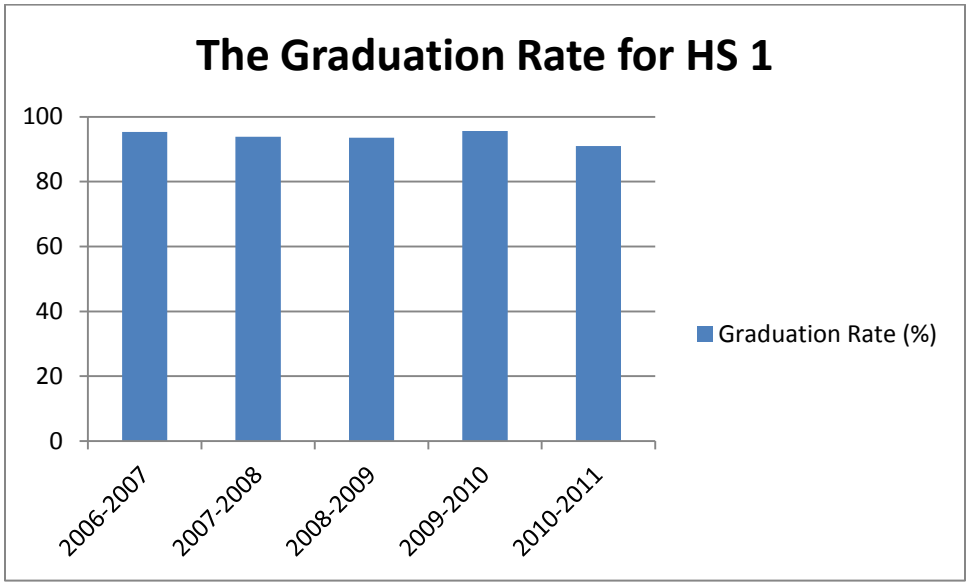


Figure 48. The Graduation Rate for HS 2

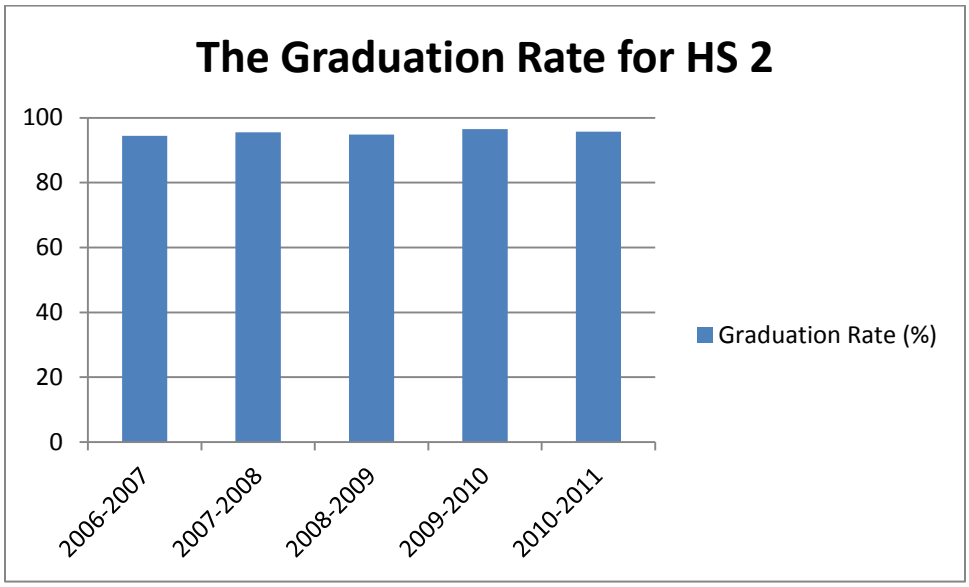


Figure 49. The Graduation Rate for HS 3

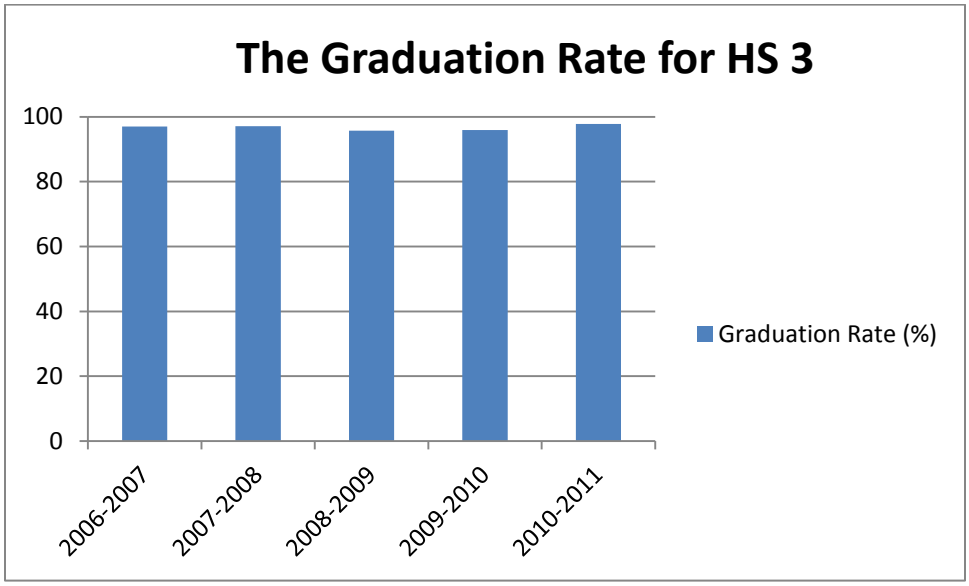


Figure 50. The Graduation Rate for HS 4

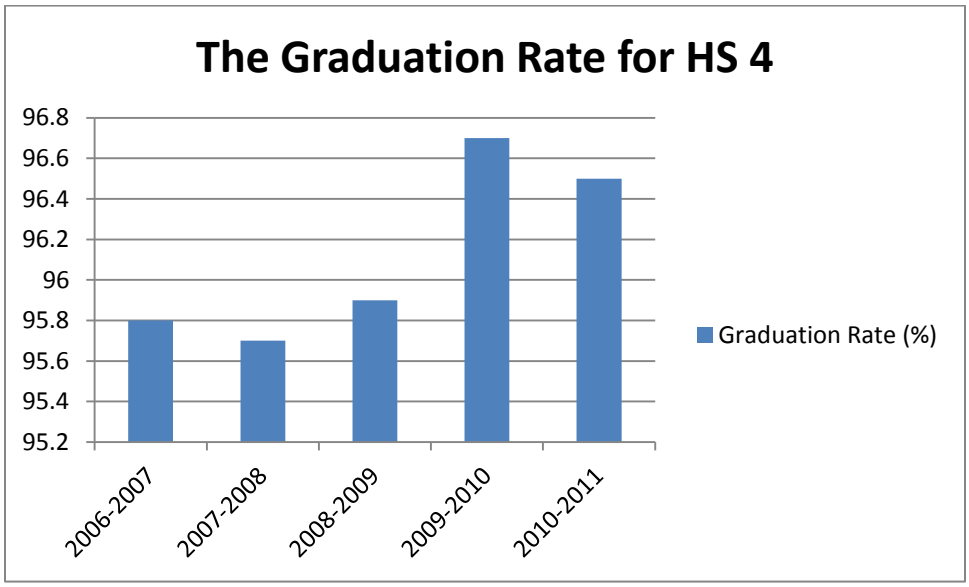


Figure 51. The Graduation Rate for HS 5

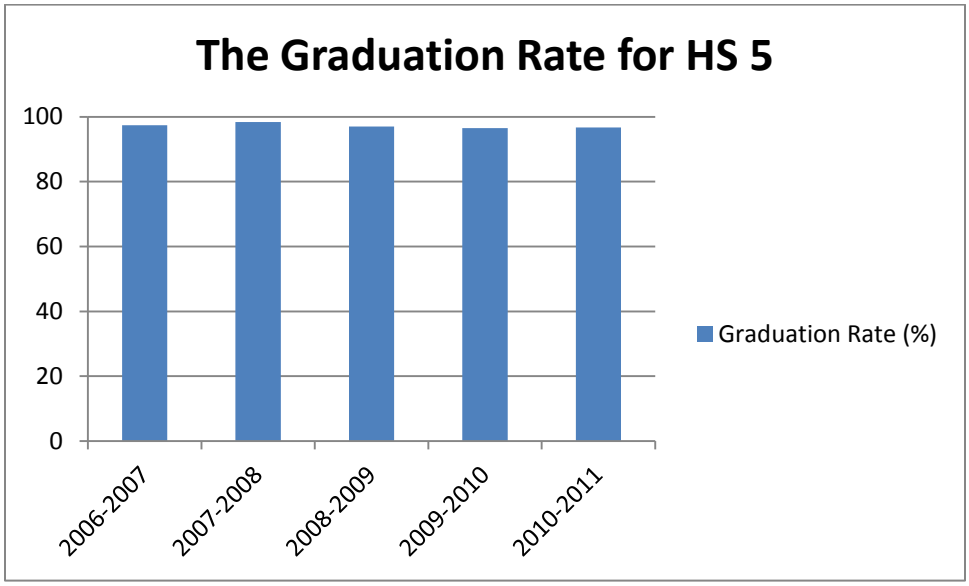


Figure 52. The Graduation Rate for HS 6

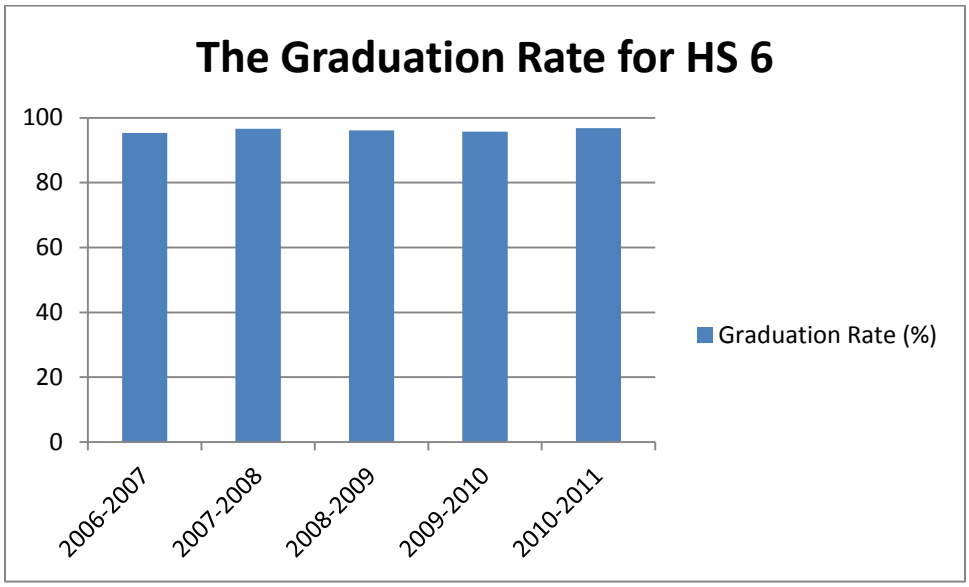


Figure 53. The Graduation Rate for HS 9

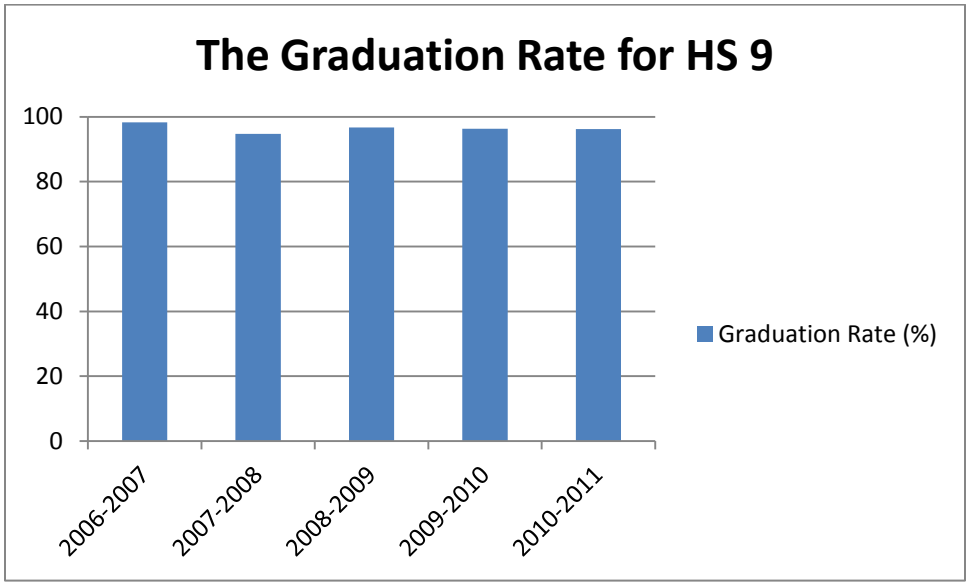


Figure 54. The Graduation Rate for HS 10